

HELMINTHOLOGICAL ABSTRACTS

Vol. I, No. 6.

323—Anales del Instituto de Biología.

- a. OCHOTERENA, I. & CABALLERO, E.—“Una nueva *Filaria* parasita de las ranas.” III (1), 29-32, 5 figs., 3 refs. [1932.]
- b. OCHOTERENA, I. & CABALLERO, E.—“Filaria parasita de la ratas de campo. *Micropleura sigmodoni* spec. nov.” III (2), 123-125, 2 figs., 4 refs. [1932.]
- c. SOKOLOFF, D. & CABALLERO, E.—“Una nueva especie de trematodo parásito del intestino del manatí. *Schizamphistoma manati* sp. n.” III (2), 163-167, 5 figs., 3 refs. [1932.]

(a) Ochoterena and Caballero describe a new species, *Chandlerella striata*, from the peritoneal folds of *Rana montezumae* and *R. halecina*, common frogs in Mexican lakes. The microfilaria from the blood is also described. This form differs from the only other species, *C. bosei*, in the dimensions of the adults and the number of postanal papillae in the male.

B.G.P.

(b) Ochoterena and Caballero describe and figure a new filarial species, *Micropleura sigmodoni*, from the pericardium, peritoneum and body cavity of the wild rat, *Sigmodon hispidus*, in Mexico. It differs from the single other species of *Micropleura* in the absence of caudal alae, oesophagus not in two portions, presence of 5 postanal and 2 terminal pairs of papillae.

B.G.P.

(c) Sokoloff and Caballero record a new species of amphistome, *Schizamphistoma manati*, from the large intestine of *Manatus latirostris* autopsied at the Chapultepec Zoo Park, Mexico. The manatee came from the delta of the Pánuco river. The amphistome differs from other species of the genus in the structure of the excretory system, and from *Cochleotrema cochleotrema* Travassos, found in the stomach of a manatee.

B.G.P.

324—Annales Musei Zoologici Polonici.

- a. SZPOTANSKA, I.—“Kilka nowych lub мало известных видов из подсемейства Hymenolepididae Fuhrmann (Cestodes).” IX (17), 247-266, 24 figs., 24 refs. [1932.]

(a) The cestodes recorded in this paper are *Drepanidotaenia bisacculina* n. sp., *D. curiosa* n. sp., *Hymenolepis rapida* n. sp., *H. globulosa* n. sp. and *Diorchis spiralis* n. sp. These tapeworms were found in *Chenopsis atrata* from Australia. *Echinorhynchotaenia nana* is renamed *Hymenolepis southwelli*.

R.T.L.

325—Annales de la Société belge de Médecine Tropicale.

a. HISSETTE, J.—“ Mémoire sur l'*Onchocerca volvulus* ‘Leuckart’ et ses manifestations oculaires au Congo belge.” XII (4), 433-529, 29 figs. [30th December, 1932.]

b. VAN SLYPE, W.—“ Contribution à l'étude des helminthiases intestinales.” XII (4), 569-579, 6 tables. [30th December, 1932.]

(a) Hissette discusses onchocerciasis volvulus in the Belgian Congo with particular reference to its ocular manifestations which are shown to be practically identical with those recorded from the New World.

The first part of this long paper is concerned with an historical account of the ocular disease, the macro- and micro-filariae, the vectors, and the growth and structure of the nodules; the second part deals with the author's clinical and pathological-anatomical observations on ocular onchocerciasis in Africa. He considers that nodules are probably always present, though they may be very small and, by their position, palpable only with difficulty. The nodule forms around young adults which continue their growth within it. As in America but less frequently, nodules form on the head in Africa, and ocular symptoms are present in some localities in 50 per cent. of the affected. He describes a diagnostic technique involving the excision of a small portion of the conjunctiva which is immediately examined in saline under the microscope.

It is increasingly difficult to maintain the distinction, drawn by Brumpt on clinical grounds, between *O. volvulus* and *O. caecutiens*. B.G.P.

(b) Van Slype describes the technique of the pyramidon reaction, by which blood serum is tested for haemolysis, and shows that certain intestinal parasitoses, notably ancylostomiasis and schistosomiasis, produces a marked positive reaction. Removal of the worms by treatment is usually followed by a negative reaction. Positive reactions are not proportional in intensity to the number of worms present. B.G.P.

326—Annali d'Igiene.

a. PANAGIA, A.—“ Sull'azione parassiticida di alcune sostanze verso l'*Echinococcus polymorphus*.” XLII (11), 756-766. [November, 1932.]

(a) Panagia has found that 2 per cent. formalin, 2 per cent. sodium chloride, and dilutions of Lugol's iodine solution of 1 in 10 and 1 in 6 are all ineffective in killing scolices and brood-capsules of hydatid, as tested by subsequent feeding to dogs. On the other hand, Lugol's solution diluted with water in the ratio 1 : 2 was completely effective in 10 minutes. B.G.P.

327—Annali del Museo Civico di Storia Naturale.

a. SCIACCHITANO, I.—“ Spedizione scientifica all' oasi di Cufra (Marzo-Luglio 1931). Gordii.” LV, pp. 305-306, 1 fig. [28th April, 1932.]

(a) Sciacchitano briefly describes *Gordius gialensis* n. sp. parasitizing an *Erinaceus aethiopicus* captured at Gialo during a scientific expedition to the Cufra oasis. The species, which is represented by a single male 57 mm. long, is apparently the first to be recorded from an insectivore. B.G.P.

328—Annals of Applied Biology.

a. GREGORY, P. H.—“The *Fusarium* bulb rot of narcissus.” xix (4), 475-514, 1 pl., 2 graphs, 27 refs. [November, 1932.]

(a) Gregory gives a brief review of the diseases attacking the underground parts of narcissus bulbs as a preliminary to discussing the *Fusarium* bulb rot of narcissus. Eelworm disease due to *Tylenchus dipsaci* is one of the diseases listed, and a brief description of the symptoms caused by this nematode is given.

M.J.T.

329—Annuaire du Musée Zoologique.

a. PIGULEVSKY, S.—“Fischparasiten des Dnjeprbassins.” xxxii (4) [In Russian, German summary pp. 451-452.] [1932.]

(a) Six new species of fish trematodes are recorded from the Dnieper basin, viz., *Pleurogenes minus* n. sp., *Mordvilkovia elongata* and *Coitocaecum ovatum* n. sp. in *Esox lucius*; *Coitocaecum macrostomum* n. sp. in *Silurus glanis*; *Lebouria acerinae* n. sp. in *Acerina cernua* and *Stephanophiala lata* n. sp. in *Scardinius erythrophthalmus*.

R.T.L.

330—Arbeiten aus der Bayerischen Landesanstalt für Pflanzenbau und Pflanzenschutz.

a. MEHL, S.—“Die Lebensbedingungen der Leberegelschnecke (*Galba truncatula* Müller).” No. 10, 178 pp., 23 pls. [1932?]

(a) In this undated publication [probably 1932] Mehl has monographed the fresh-water mollusc *Galba truncatula*, the carrier of *Fasciola hepatica*, mainly from the aspects of biology and control.

The characters of the shell, which at its longest is 16 mm. long, and eggs, are given and the snail is sharply differentiated from *Stagnicola palustris* with which it has been confused. In discussing likely habitats, brooks and ditches (and, in wet years, flooded meadows), the author states that the snails cannot withstand a flow of 40-50 cm. per second.

Total eradication is impossible. Control should be effected in dry years when the snails are most restricted in dispersal, and should take into account the detailed physiographical features of the area in question. Drainage should be arranged to give the most rapid flow consonant with the fall of the land. Of natural enemies, the domestic and wild duck are the only ones recommended: wading birds are more likely to spread the infection.

The addition of copper sulphate to brooks, and the use of both CuSO_4 and kainit on meadows, are fully discussed. The treatment of infected stock with CCl_4 is recommended, and the principal points in prophylaxis and in educational propaganda are discussed.

B.G.P.

331—Archief voor de Koffiecultuur in Nederlandsch-Indië.

a. BALLY, W.—“Bemesting van Koffietuinen, die door aaltjes besmet zijn. Voorloopig verslag.” vi (2), 43-56. [July, 1932.]

(a) In this interim report Bally concludes that, where coffee is to be planted in ground infected with *Tylenchus coffeeae* and *T. similis*, the plants

benefit considerably, at least during their early stages, from the application of nitrogen and phosphorus in the form of artificials. Moreover, at Sengon (Java), where the soil is deficient in these minerals, the treatment is shown to be economically justifiable. The tabulated results of experiments show mean lengths and weights of plants treated with various artificials, and the differences between these and the means of untreated plants; amount of growth in one year is similarly dealt with. [The differences are significant with nearly all the artificials, and very marked with some; "Nitrophoska" appears to give the best results.] Further reports are promised.

B.G.P.

332—Archiv für Experimentelle Zellforschung.

a. BERGMAN, R. A. M.—"Mikrofilarien und Blutleukozyten Kulturen in vitro." XIII, pp. 491-509, 19 figs., 29 refs. [1932.]

(a) Bergman has noted the reactions of microfilariae in cultures of leucocytes *in vitro*.

He gives a detailed account of the changes which occur in the larvae as they become moribund until death finally intervenes. The larvae are then completely absorbed with the exception of the cuticle. He discusses the bearing that these data have on the various theories of elephantiasis. The eosinophile leucocyte is mainly concerned in the absorption and he is of the opinion that lymphocytes are transformed into eosinophiles in these cultures. P.A.C.

333—Archiv für Hydrobiologie und Planktonkunde.

a. SCHNEIDER, W.—"Nematoden aus der Kiemenhöhle des Flusskrebses." XXIV, pp. 629-636, 1 fig. [1932.]

(a) Schneider records the presence of 14 species of nematodes in the branchial chamber of fresh-water crayfish of the genera *Potamobius* and *Cambarus* collected by Prof. Thienemanni from various still and running waters in Germany.

The nematodes belonged to the following genera: *Trilobus*, *Mononchus*, *Dorylaimus*, *Actinolaimus*, *Chromadorita*, *Prochromadorella*, *Monhystera* and *Rhabditis*, and included one new species, *Prochromadorella astacicola*. *Rhabditis teres* and *R. inermis* were present in large numbers, the latter species differing in details from the description given by Reiter in 1928.

B.G.P.

334—Archiv für Naturgeschichte.

a. ALLGÉN, C.—"Über einige freilebende marine Nematoden aus der Umgebung der Biologischen Station auf der Insel Herdia (Norwegen). Mit Anhang: Zur Richtigstellung älterer und neuerer mariner Nematodengenera I." (N.F.) I (3), 399-434, 12 figs. [1932.]

(a) Allgén creates one new genus *Bognenia* and seven new species in an account of 41 species of marine nematodes found at Herola, Norway. R.T.L.

335—Archiv für wissenschaftliche und praktische Tierheilkunde.

a. POPOW, P. J.—“Zur Erforschungsmethodik bei der *Fasciola hepatica*.” *LXV* (1), 72-74, 2 figs., 3 refs. [1932.]

(a) Popow describes a technique, designed for testing the effect of anthelmintics, for recording kymographically the contractions of a *Fasciola hepatica* in a test-tube.

One end of the fluke is tied by a thread to the lever actuating the kymograph, the other end being anchored. The fluke is immersed in physiological saline, or in the drug to be tested, which is maintained at 37°C. by keeping the apparatus in an outer vessel of warm water. Preliminary tests in saline indicate that this fluke normally displays rhythmic contractions. B.G.P.

336—Archivio Italiano di Scienze Mediche Coloniali.

a. NÀJERA, L.—“Una nuova tecnica per la numerazione di uova di elmiinti nelle feci (camera di Zschucke).” *XIII* (4), 207-214. [1st April, 1932.]

b. LODATO, G.—“Bilharziosi vescicale e reperto di *Bulinus*, *Melania* e *Limnaea* in alcune località del Fezzan (Tripolitania).” *XIII* (4), 235-240. [1st April, 1932.]

c. TEDESCHI, C.—“Alterazioni sperimentali da liquido perientericio di ascaridi.” *XIII* (5), 257-282. [1st May, 1932.]

d. PIRRO, V. di.—“Di alcune complicazioni eccezionali dell'elminiasi.” *XIII* (6), 353-354. [1st June, 1932.]

(a) Nàjera describes an egg-counting technique especially applicable to herbivores. The method, which involves a known volume of faeces and the use of a counting cell, has been described by the author in Medicina de los Países Cálidos [Helm. Abs. 1, No. 143c]. B.G.P.

(b) Lodato gives clinical descriptions of 3 cases of urinary schistosomiasis in Tripoli, all showing a terminal haematuria and eggs typical of *S. haematobium* in the urine. *Bulinus contortus*, *Melania tuberculata* and *Limnaea ovata* were common in the area. B.G.P.

(c) Tedeschi has investigated the effects on white mice of repeated subcutaneous injections of the fresh body fluid of the horse ascaris.

He reviews previous theories and experiments bearing on the possibility of a toxin produced by ascarids; such work has mostly been invalidated through the injections' not being continued over a sufficient period. The mice died after 10-12 injections, separated one from another by 5-10 days, and showed hyperaemia, congestion and haemorrhagic spots in most of the viscera. The histological picture of most organs, usually involving cellular infiltration, is described in detail and discussed. B.G.P.

(d) Pirro describes two rare cases of fatal complication of intestinal helminthiasis, both involving occlusion and peritonitis. One, a man, was a case of hernia and perforation by an ascaris; the other, a dog, was a case of spasmodic occlusion and hyperinfection with *Ancylostoma caninum*. B.G.P.

337—Archivio Zoologico Italiano.

- a. KHALIL, M.—“Combating trematode infections by destroying the molluscan intermediate host with special reference to *Schistosoma*.” XVI (3/4), 1330-1339. [1932.]
- b. ACKERT, J. E.—“Fowl resistance to parasitism affected by vitamins A and B.” XVI (3/4), 1369-1379. [1932.]
- c. FORTI, A.—“L.F. Marsilii e lo Schistocefalo dello Spinarello.” XVI (3/4), 1437-1439. [1932.]
- d. PALOMBI, A.—“La copulazione nei Trematodi. Ricerche sul significato fisiologico del canale di Laurer.” XVII (1/2), 123-151. [1932.]

(a) In this paper Khalil confines himself to a discussion of the application of molluscan destruction for the control of bilharziasis in Egypt. An account is given of the use of copper sulphate in the Dakhla oasis. An attempt at eradication in the Nile valley was particularly successful but the snails reappeared after three months. To overcome the possibility of reintroduction from the Nile and main canals the use of wire sieves is advocated.

R.T.L.

(b) Ackert has studied the resistance of chickens to *Ascaridia lineata* when maintained on a diet deficient in vitamin A (cod liver oil) and B (Baker's yeast). Without vitamin A the size and number of worms was greater at the end of three weeks than in the controls. Without B more worms remained in the chickens but the size in the controls supplied with Baker's yeast indicates that this contains a special growth factor. The experiments are said to give no evidence that *Ascaridia lineata* requires either A or B complex.

R.T.L.

(c) Forti presents an historical note on the presence of *Schistocephalus gasterostei* in Italy. Under the name *Ligula simplicissima* it was recorded by Parona & Mazza (1900) from *Atherina mochon* (marine), and by Parona (1912) from stickleback. In 1897 it was recorded also from aquatic birds. What is not generally realized is that as early as 1725 Marsilii recorded “yellowish, leech-shaped worms” from the stickleback in lake Garda.

B.G.P.

(d) Palombi, discussing fertilization in trematodes, considers internal autofecundation very unlikely since no connection is known to exist internally between male and female organs; similarly autocopulation is rejected on morphological grounds. External autofecundation may rarely occur, by closure of the common genital pore, particularly where a single fluke is isolated in a cyst. But the usual methods are copulation *per uterum*, either reciprocal or unilateral, and unilateral copulation through Laurer's canal. He presents figures and photographs of flukes *in copula* involving the uterine route in *Podocotyle fractum* and the Laurer's canal route in *Diphterostomum brasinae* and *Haploporus benedeni*. Although it is thus proved that Laurer's canal is a functional vagina in some species, it is probably an organ in course of reduction whose function is being taken over by the uterus.

B.G.P.

338—Archivos Argentinos de Enfermedades del Aparato Digestivo y de la Nutrición.

- a. BACIGALUPO, J.—“Algunas consideraciones sobre teniasis per *Hymenolepis nana*.” VII (3), 359-364. [February-March, 1932.]

(a) Bacigalupo finds that *Hymenolepis nana* is very common in the Argentine, especially in children.

The number of worms may run into thousands, in one case, 7,360; but treatment with 4 gm. ether-extract of male fern followed by a purge is effective. Such large numbers, together with the finding of cystic stages in the terminal portion of the small intestine, in the villi, suggest that the eggs may hatch *in situ* giving rise to true autoinfestation.

B.G.P.

339—*Arkiv för Zoologi.*

a. NYBELIN, O.—“*Crepidostomum sueicum* n. sp.—ein Trematode mit ungewöhnlich weiter morphologischer Variationsbreite.” *XXVB* [1933.] (1), No. 1, 6 pp. [Issued separately: 1932.]

(a) Nybelin describes and illustrates *Crepidostomum sueicum* n. sp. in *Thymallus thymallus*, *Salmo trutta*, *Salmo alpinus*, *Lota lota*, and *Cottus gobio* in Sweden. The species shows great variation in size and shape, depending on the host, the degree of contraction, and the time of year. Thus, the length varies between 0.49 mm. and 2.65 mm.

B.G.P.

340—*Bahia Medica.*

a. FRÓES, H. P.—“*Dermatite linear serpiginosa.*” *III* (19), 282-292, 3 figs. [November, 1932.]

(a) Fróes discusses creeping eruption, as met with in Brazil, under the headings: Synonymy, Etiology, Symptomatology, Diagnosis, Prognosis, Therapeutics and Prophylaxis. In Brazil the affection is probably due to larvae of *Ancylostoma brasiliense*, though the author describes an attempted experimental infection and an examination of numerous serial sections cut from excised skin, both of which were negative. Gnathostomes do not occur in Brazil, and oestrid larvae give rise to a different lesion owing to their subepidermal or subcutaneous route.

B.G.P.

341—*Boletín de la Asociación Médica de Puerto Rico.*

a. HOFFMAN, W. A.—“*Gapeworm infestation of man.*” *XXIV* (207), 703-704. [December, 1932.]

(a) Gapeworm in man is of extreme rarity and according to Hoffman only four cases have been recorded. A fifth case from the southern part of Porto Rico is reported from a teacher with bronchiectasis, in whom coughing and fever were constant symptoms. The specimens were diagnosed by Dr. Schwartz as *Syngamus laryngeus* with minor morphological differences. An addendum to the paper mentions a sixth case in Trinidad. R.T.L.

342—*Boletín de la Sociedad Española de Historia Natural.*

a. LOPEZ-NEYRA, C. R. & POZO, D. G.—“*Nuevo trematode intestinal humano en Europa.*” *XXXII* (6), 297-304, 6 figs., 6 refs. [August, 1932.]

(a) Lopez-Neyra and Pozo record from a healthy patient in Spain, who was infected also by *Ascaris*, *Hymenolepis* and *Trichuris*, a trematode egg which they take to be that of *Metagonimus romanicus* (= *Lossia romana* Ciurea, 1915). This species has been recorded from the dog, cat and pelican, but not hitherto from man. It may be identical with *M. yokogawai*. B.G.P.

343—Bollettino di Zoologia.

a. WITENBERG, G.—“Acanthocephalen-Studien. II. Ueber das System der Acanthocephalen.” III (5), 253-266, 2 figs., 13 refs. [October, 1932.]

b. RAFFAELE, G.—“Su alcuni cestodi rinvenuti in una pantera.” III (6), 299-306. [1932.]

(a) After critically reviewing the systems of classification of *Acanthocephala* proposed by Hamann, Lühe, Travassos, Southwell & MacFie, Thapar, and Meyer, a scheme is proposed by Witenberg which has proved helpful to him in the recognition of the various *Acanthocephala* found in Palestine.

The new classification is based upon the structure of the proboscis. Three primary groups are recognised (i) proboscis with reduced sheath, (ii) proboscis with well developed sheath, (iii) muscular proboscis without sheath, and these contain 5 families and 53 genera for all of which keys are suggested.

R.T.L.

(b) In a panther (*Felis pardus variegata* var. *nigra*) Raffaele found specimens of *Diphyllobothrium*. These are described and the validity of the eight species of this genus is discussed.

R.T.L.

344—Brasil Medico.

a. MORAES, Jr., J.—“Nota sobre o choque anafilactico ‘in vitro’ com extractos de helmintos.” XLVI (29), 638-639, 3 figs. [July, 1932.]

(a) Moraes has demonstrated that the uterus of virgin guinea pigs, sensitized with intraperitoneal injection of aqueous extracts of whole *Ascaris suum* reacts *in vitro* with an anaphylactic shock, in the presence of extracts of *A. suum* and *A. lumbricoides*. The uterus shows no reaction with *Macracanthorhynchus moniliformis* or *Hymenolepis diminuta*.

P.A.C.

345—British Journal of Ophthalmology.

a. NAYAR, K. K. & PILLAI, A. K.—“Case of filariasis oculi.” XVI (9), 549-551. [September, 1932.]

(a) A threadlike wriggling worm, apparently 3 mm. long, was seen in the vitreous just in front of the macula. There was an oval clot of blood to which one end of the worm was attached. The worm was lost during an attempt to remove it, but from the fact that the patient came from an area in which *Filaria bancrofti* was endemic and had microfilariae in his blood it is assumed by Nayar and Pillai that the adult worm belonged to this species.

R.T.L.

346—Bulletin de l'Académie Vétérinaire de France.

a. HENRY, A.—“Étiologie de la cylicostomose larvaire.” V, pp. 252-254. [1932.]

(a) This paper by Henry is a critical review of a memoir entitled “Considérations sur l'étiologie de la cylicostomose larvaire” by Dr. A. Dumas.

D.O.M.

347—Bulletin. Arkansas Agricultural Experiment Station.

a. BLEECKER, W. L. & SMITH, R. M.—“ Efficiency of vermicides for poultry.” No. 280, pp. 40-41. [October, 1932.]

(a) Bleecker and Smith find that Black Leaf 40 in doses of 1/10 cc. plus 15 grains of Kamala is a safe and cheap vermicide for intestinal helminths of poultry. Iodine vermicide (Merck) and Pulvules No. 142 (Lilly) plus 15 grains of Kamala are less efficient than Black Leaf 40. P.A.C.

348—Bulletin International de l'Académie Polonaise des Sciences et des Lettres.

a. GASOWSKA, M.—“ Die Vogelcestoden aus der Umgebung von Kiew (Ukraine).” Year 1931, Ser. B II (7/10), pp. 599-627, 9 figs., 1 pl., 83 refs. [1932.]

(a) Gasowska examined 26 spp. of birds from 8 families in the neighbourhood of Kiev (Russia). The most important cestode genera found were *Davainea*, *Aploparakis*, *Hymenolepis* and *Anomotaenia*. Among new species described is *Hymenolepis swiderskii* which has no genital pore. The successive modifications of the oncosphere of *Aploparakis* are described and the author completes the work of Krabbe & Marek on *Anomotaenia pyreformis* Wedl.

S.G.S.

349—Bulletin. Massachusetts Agricultural Experiment Station.

a. GUBA, E. F.—“ Carbon disulfide emulsion for the control of the root-knot nematode.” No. 292, 16 pp., 3 figs., 8 tables, 9 refs. [December, 1932.]

(a) Guba describes a method of application of carbon disulphide emulsion to greenhouse soil beds which has proved an effective means of controlling the root-knot nematode.

An emulsion containing 68 per cent. carbon disulphide, 26 per cent. water and 6 per cent. rosin fish oil soap, diluted with water to a one in fifty concentration and applied to the soil at the rate of one gallon per square foot, was found to give a satisfactory control of the nematode at a very moderate cost, and to be followed by normal yields. The treatment was more effective when the larger infested root masses were removed from the soil, and decomposition of the remaining roots was hastened by keeping the soil damp and warm for some weeks before the application of the emulsion. Replanting may safely be carried out one week after soil treatment. M.J.T.

350—Bulletin du Musée Royal d'Histoire Naturelle de Belgique.

a. ADAM, W.—“ Note sur *Heterodera schachtii* Schm. parasite des cactus.” VIII (23), [Reprint 10 pp.], 6 figs., 4 tables, 6 refs. [October, 1932.]

(a) Adam describes the morphology of *Heterodera schachtii* parasitic on two species of cactus (*Phyllocactus akkermanii* and *Cereus speciosus*) and compares the various stages with the morphology of the nematode from other hosts.

This strain of *H. schachtii* resembled the oat strain (*H. schachtii major*) in the size of the cysts but the eggs and larvae were intermediate between the "major" and "minor" forms, while the males were smaller than in any other strain. M.J.T.

351—Bulletin du Muséum.

- a. DOLLFUS, R. P.—"Mission saharienne Augiéras-Draper, 1927-1928. Cestodes de reptiles." (Ser. 2), IV (5), 539-554, 8 figs., 37 refs. [1932.]
- b. DOLLFUS, R. P.—"Mission saharienne Augiéras-Draper, 1927-1928. Trématodes de mammifères, oiseaux et poissons." (Ser. 2), IV (5), 555-563, 1 fig., 27 refs. [1932.]

(a) Dollfus redescribes *Oochoristica agamae* from *Agama inermis* and *O. tuberculata* from *Cerastes vipera* collected in the Sahara by the Augiéras-Draper Mission, 1927-8. The species of this genus hitherto recorded from reptiles are tabulated together with references, hosts and localities. B.G.P.

(b) Dollfus records six species of trematodes collected from mammals, birds and fishes in the Niger valley by the Augiéras-Draper Mission. The same species occur in both the Nile and Niger valleys. B.G.P.

352—Bulletin de l'Office Internationale des Épizooties.

- a. SKRJABINE, K. I.—"La Prophylaxie par le traitement des Helminthoses du mouton, d'après la pratique de l'Union Soviétique." VI (1), 155-172. [May-June, 1932.]

(a) Skrjabin gives an account of the extensive co-ordinated campaigns, in progress or projected, against the helminthiases of domesticated animals—and particularly sheep—in the U.S.S.R.

Comprehensive schemes of research and of therapeutic and prophylactic control, associated with the second "5-Year Plan" period, are initiated from the Central Institute of Helminthology at Moscow [of which Prof. Skrjabin is Director], the work of the numerous local stations being directed by a group of regional stations. Research is at present mainly concentrated on the following sheep problems: (i) Fascioliasis. In this connection it is proposed during the current year to dose 1·9 million sheep with CCl_4 . (ii) Anoplocephaliasis. The treatment is 10-30 gm. of male fern root followed by a saline purge. (iii) Trichostrongyliasis. In addition to treatment with 100 gm. of a 1 per cent. $CuSO_4$ solution, the prophylactic rotation of pastures is being tested over two years. (iv) Verminous bronchopneumonia due to *Dictyocaulus filaria* receives the special attention of the Institute. Diagnosis is effected by the Baermann technique, treatment by intra-tracheal injections of iodo-glycerine, and prophylaxis by pasture rotation and the installation of hygienic drinking troughs. The author pleads for the recognition of such problems as of international significance. B.G.P.

353—Bulletin of the Oregon Agricultural Experiment Station.

- a. McWHORTER, F. P. & WEISS, F.—"Diseases of narcissus." No. 304, 41 pp., 21 figs. [1932.]

(a) McWhorter and Weiss give a general account of the nematode disease of narcissus caused by *Tylenchus dipsaci* with special reference to the recognition and control of the disease.

Host specialization and symptoms caused by the pest are dealt with, and crop rotation, handling of diseased stock and the hot water treatment are discussed at some length. Special reference is made to the necessity of applying control measures at the most suitable periods for producing the best results.

M.J.T.

354—Bulletin de la Société Entomologique de Paris.

a. DOLLFUS, R. P.—“Sortie de douze *Gordius* par les stigmates d'un *Dytiscus*.” No. 17, pp. 247-254, 24 refs. [1932.]

(a) Dollfus, in reviewing our knowledge of the helminth parasites of Dytiscids, points out that the available information is very meagre; that in many cases the parasites, unaccompanied by any descriptions, are designated by names which must be considered as *nomina nuda*; and that amongst observations on the bionomics of the parasites the point of exit from the hosts, in the case of *Gordius* worms, is stated to vary in position.

The following water beetles are known as hosts of Gordiacea and Mermithidae: *Agabus ferrugineus* Fab., *Acilius sulcatus* L., *Colymbetes striatus* L., *Dytiscus semisulcatus* Müll. and *D. marginalis* L. The many observations of various workers on the last named species are detailed by Dollfus who shows that in one case at least *Gordius* worms were reported to have escaped via the spiracles of the host and not by a perforation under the ninth tergite in the imago and by a corresponding point in the larva as mentioned by another observer. The author, in view of the scanty knowledge on the subject, expresses the hope that entomologists, in their examinations of material, will note in the case of Dytiscids parasitized by Gordiacea the following points amongst others: the exact number of parasites issuing from an individual host, the proportion of males to females, the exact position in the body from which the worms escape and the locality of the hosts.

J.N.O.

355—Bulletins de la Société de Pathologie Exotique.

a. ROBIN, L. A.—“Perfectionnement apporté à une méthode d'enrichissement des selles.” xxv (7), 700-702. [July, 1932.]

(a) Robin describes a new technique for concentrating protozoan cysts in faecal examinations and is particularly useful where a large amount of vegetable debris is encountered. It would also appear to be of value in concentrating helminth eggs.

D.O.M.

356—Bulletin de la Société des Sciences Veterinaire.

a. PASCAL, M.—“Distomatose du lapin de garenne.” xxxv, p. 18. [1932.]
b. COLLET, P.—“Filariose cardiaque chez le chien.” xxxv, p. 141. [1932.]

(a) Pascal records a heavy infection of the common bile duct of a wild rabbit with liver flukes of varying age. The rabbit was killed in the Azergue

Valley, N.W. of Lyon, early in 1932 and the writer considers that this case indicates the incidence of liver fluke in the cattle there, as a result of the wet summer of 1931. Both bovine and ovine infections are on record for this district.

S.G.S.

(b) Collet found several *Filaria* worms (presumably *Dirofilaria*) in the right heart of a dog autopsied at Lyon : and considered that this and previous observations indicate the possible incidence of *Filaria* in dogs in the Lyon and Dombes (Rhône Valley) districts.

S.G.S.

357—Bulletin de la Société Zoologique de France.

- a. TSENG, SHEN.—“Douve trouvée dans un oeuf de poule à Nankin et considérations sur les espèces du genre *Prosthogonimus*.” LVI (5), 468-478, 1 fig., 6 tables, 27 refs. [January, 1932.]
- b. DORIER, A.—“Sur la présence de *Chordodes tellinii* (Camerano) en Macédoine.” LVI (6), 533-534. [February, 1932.]
- c. DOLLFUS, R. P.—“Identification d'un cestode de la collection du Laboratoire de Parasitologie de la Faculté de Médecine de Paris.” LVII (3), 246-258, 15 figs., 18 refs. [July, 1932.]
- d. JOYEUX, C.—“Notre rectificative au sujet des crochets du rostre chez *Raillietina* (*Raillietina*) *insignis* (Stendener, 1877).” LVII (5), 397. [December, 1932.]

(a) Tseng's paper concerns a Lepodermatid fluke found inside a fowl's egg at Nankin, China, and identified by him as *Prosthogonimus japonicus*. A full morphological description and figure are given and the fluke is compared in detail with a specimen of the same species found under identical circumstances in Japan. There follows a comparative account of the genus *Prosthogonimus* and, in conclusion, there is appended a table giving the host and outstanding anatomical characteristics of 15 of the 17 known species. S.G.S.

(b) The tropical Gordiid genus *Chordodes* has only one truly European representative viz., *C. tellinii* (Camerano), previously recorded from Italy and Sardinia and from the Caspian basin. Dorier links up these two localities by reporting a single female collected in 1919 at Boresnica, Macedonia ; and gives a brief anatomical description.

S.G.S.

(c) Whilst reviewing the helminthic and crustacean parasites of the sunfish, *Orthagoriscus mola*, Dollfus examined a cestode, reported from this host, in the collections of the Parasitology Laboratory of the Faculté of Medicine, Paris, and found it to be a serpent form, very probably from a South American species of Boidae, and not from the host as labelled.

A very detailed morphological description of the tapeworm is given by the author who considers it to be a representative of the Proteocephalidae. After briefly reviewing the genera comprising this family, Dollfus concludes that the form falls into the genus *Crepidobothrium* containing the single species *C. Gerradi* (Baird) from the Boa Constrictor, *Constrictor constrictor*, and the Anaconda, *Eunectes murinus*. The form under examination, when compared with the descriptions of *C. Gerradi* given by other authors, is considered to be a new variety, viz., *Crepidobothrium Gerradi minus* n. var., as the differences noted between the two cestodes are not of specific value.

J.N.Q.

(d) Joyeux corrects his previous description of the *Raillietina* (*Raillietina*) *insignis* (Stendener, 1877), from Columbiform birds, which he had confused with *Davainea australis*. The actual length of the hooks should be 12-14 μ and not 20 μ , 8 and 24 μ as previously stated. Those of *Davainea insignis* are all known to be very small.

S.G.S.

358—Circular. United States Department of Agriculture.

a. KING, C. J. & LOOMIS, H. F.—“Agricultural investigations at the United States field station, Sacaton, Ariz. 1925-1930.” No. 206, 64 pp. [February, 1932.]

(a) King and Loomis state [pp. 17-20] that *Heterodera radicicola* on cotton has been a serious problem at the U.S. Field Station in Arizona since 1926. Pima cotton was especially involved. Clean fallowing for two years, with or without a dressing of thermogen mulch paper, was the most effective method of control.

B.G.P.

359—Comptes Rendus. Deuxième Congrès International de Pathologie Comparée.

a. REBELLO, S., COSTA, S. F. G. da & RICO, T. J.—“Les bases expérimentales de la thérapeutique antihelminthique.” II, pp. 156-160, 1 fig. [1932.]
 b. COSTA, S. F. G. da.—“L'action antihelminthique de quelques composés arsenicaux organiques.” II, pp. 161-163. [1932.]
 c. LIPINSKI, W.—“Recherches sur l'influence des parasites intestinaux sur l'organisme humain et les nouvelles méthodes de traitement des maladies parasitaires (ascariasis, trichocephaliasis, oxyuriasis).” II, pp. 164-165. [1932.]
 d. LÉO, G.—“Sur les helminthiases.” II, pp. 165-169. [1932.]
 e. RODHAIN, J.—“Les infections à *Trichostrongylus* chez les européens au Congo Belge.” II, pp. 169-172. [1932.]
 f. URBAIN, A.—“Sur les pyrétrines et leur emploi dans les helminthiases équines.” II, pp. 173-177. [1932.]
 g. GARIN, C.—“Sur le traitement de l'ankylostomose des mineurs.” II, pp. 177-181. [1932.]
 h. LABBÉ, M.—“Les principaux syndromes cliniques causés par l'helminthiase intestinale.” II, pp. 181-186. [1932.]
 i. LOEPER, M. & SOULIÉ, P.—“Les aspects cliniques et les causes possibles des accidents digestifs provoqués par la ténia.” II, pp. 187-196. [1932.]
 j. COICOU, F.—“Le rôle des blattes comme hôtes de certains parasites intestinaux.” II, pp. 196-205. [1932.]
 k. EYQUEM, E.—“Importance de l'inspection des viandes dans la prophylaxie des maladies parasitaires transmissibles à l'homme.” II, pp. 205-213. [1932.]

(a) Rebello, da Costa and Rico describe a technique which they use in testing solutions of drugs on helminths *in vitro*.

By means of a simple apparatus, the reactivity of a particular helminth in any drug solution is recorded graphically. They have used this apparatus successfully with *Ascaris lumbricoides*, *Gigantorrhynchus hirudinaceus*, *Dipylidium caninum*, *Taenia serrata*, *T. saginata* and *Uncinaria stenocephala* with various anthelmintics.

P.A.C.

(b) Da Costa has used stovarsol, containing pentavalent arsenic and narsenol (914) and sanluol (606), each containing trivalent arsenic, as anthelmintics.

In dogs he found that narsenol removed 65 per cent., stovarsol 51 per cent. and sanluol 48 per cent. of the ascarids present. Long portions of the strobila of *T. serrata* were expelled but no scolices. 74 per cent. of ascaris from humans were removed by stovarsol while only portions of the strobila of *T. saginata* were expelled as in the dogs. A large number of *Trichocephalus trichiurus* were removed from one patient by means of this drug. P.A.C.

(c) The stools of 1,300 persons were examined by Lipinski and eggs of intestinal worms were found in 40 per cent. of them. 3.9 per cent. carried *Ascaris lumbricoides*; 29.6 per cent. *Trichocephalus dispar*; 5.7 per cent. had mixed infestations of *Ascaris* and *Trichocephalus* and 0.38 per cent. had *Oxyuris vermicularis*. In all cases there was a diminution in the haemoglobin index and in the number of red corpuscles; in most there was a leucocytosis and an eosinophilia. He recommends the use of stovarsol as an anthelmintic against *Trichocephalus*. P.A.C.

(d) Léo suggests that helminths may often be incriminated in enterocolitis, typhlitis and appendicitis, painful dysmenorrhoea and colibacilluria. He suggests further that in districts where *Oxyuris* and *Trichuris* are known to be prevalent, rigid anthelmintic treatment should always be administered before and after an appendicectomy. Certain nervous symptoms have been associated with the presence of helminths. P.A.C.

(e) Rodhain has examined the stools of 158 whites from the Belgian Congo and has found 8 cases of ancylostomiasis, 4 infections of *Strongyloides stercoralis*, 9 of *Trichocephalus* and 6 of *Trichostrongylus*. Two cases had a double infection of ancylostomes and trichostrongyles. He cites the treatment given to two cases in order to show the great resistance that *Trichostrongylus* has to many anthelmintics. Thymol, oil of chenopodium, carbon tetrachloride and pyrethrin were used with very little result. P.A.C.

(f) Urbain has had very successful results following the use of the pyrethrins in the treatment of verminous anaemia of horses.

The usual dose administered was 1 gramme dissolved in 20 grammes of castor oil, but he has given doses as large as 10 grammes in 25 grammes of oil without any ill effects resulting to the horse. P.A.C.

(g) Garin compares the efficiency of male fern, carbon tetrachloride, pyrethrin, thymol and tetrachlorethylene against hookworm in miners in the St. Etienne.

Male fern and pyrethrin were completely ineffective and he gives no figures for the efficiency of CCl_4 . Thymol, in doses of 3 gm. gave good results, 56 per cent. of the patients being completely cured in one series of experiments and 35 per cent. in a second series. He strongly recommends, however, the use of tetrachlorethylene, having effected complete cures after a single treatment in 77.4 per cent. of his cases. It has proved to be non-toxic. He describes his technique for counting the number of worms passed in the stool before and after treatment. P.A.C.

(h) Labbé gives an account of some of the more typical clinical symptoms which he has found occurring in cases of helminthiasis. In the presence of *Ascaris*, there is often a marked cachexia and denutrition with an increased secretion of HCl in the stomach, together with a haemolytic jaundice. The

lumen of the gut may be occluded. Both *Ascaris* and *Oxyuris* cause menstrual disturbances in women. *Trichocephalus* infection is often accompanied by a local or general enteritis, intense diarrhoea and a catarrhal jaundice. *Taenia saginata* has been known to produce symptoms suggesting the presence of a gastric ulcer. With the administration of an anthelmintic these symptoms often disappear.

P.A.C.

(i) Loeper and Soulié find that carriers of *Taenia saginata* sometimes show gastric and intestinal symptoms which may be very misleading to the clinician. Symptoms sometimes simulate those of a gastric or duodenal ulcer; there may be extreme pain and flatulence. On other occasions there may be diarrhoea with increased appetite and excessive salivation. These symptoms may be the result of local irritation, of a reflex action, or finally of an intestinal neuritis. Such neuritis is toxic and may be caused either by an anaphylactic reaction or a chemical action. So far, however, any chemical substance producing such reaction is entirely hypothetical.

P.A.C.

(j) Coicou has found eggs of *Fasciola hepatica*, *Ascaris lumbricoides*, *Trichuris trichura* and *Strongyloides intestinalis* in the intestines of cockroaches and suggests that these insects are common vectors of certain parasites transmissible to man. Certain new-laid hen's eggs contained adults of *Metagonimus yokogawai* in the albumen.

P.A.C.

(k) Eyquem gives the percentages of pigs and other animals, slaughtered in Santiago for human consumption, which were infested with *Trichina*, *Cysticercus* and *Echinococcus*. In view of the great danger to humans, he stresses the importance of more rigid meat inspection and the destruction of all infected carcasses.

P.A.C.

360—Comptes Rendus mensuels des Séances de la Classe des Sciences Mathématiques et Naturelles. Académie Polonaise des Sciences et des Lettres.

- a. RUSZKOWSKI, J. S.—“Cycle d'évolution du Cestode *Drepanidotaenia lanceolata* (Bloch).” Year 1932, (1), pp. 4-5. [January, 1932.]
- b. WIŚNIEWSKI, L. W.—“*Cyathocephalus truncatus*, Pall. Développement, morphologie et biologie.” Year 1932, (7), p. 8. [July, 1932.]
- c. WIŚNIEWSKI, L. W.—“Sur deux nouveaux Trématodes progénétiques des Gammarides balkaniques.” Year 1932, (7), p. 8. [July, 1932.]
- d. SEKULOWICZ, S.—“Études sur le développement et sur la Biologie de *Caryophyllaeus laticeps* (Pallas).” Year 1932, (8), p. 4. [October, 1932.]
- e. RUSZKOWSKI, J. S.—“Études sur le cycle évolutif et sur la structure des cestodes marins.” IIIème partie: Le cycle évolutif du *Terranthyrum Grallotic erinaceus* (van Beneden 1858).” Year 1932, (9), p. 6. [November, 1932.]

(a) Ruszkowski produces experimental evidence that *Cyclops strenuus* is the chief intermediate host of *Drepanidotaenia lanceolata* a common parasite of the goose, while *C. insignis* and *Diaptomus gracilis* are facultative hosts. The larvae complete their development in about a month. The author states that the cysticercoids found by Daday in *Diaptomus spinosus* do not belong to this species. The writer describes and figures various experimental stages and rectifies certain existing errata in the description of the adult.

S.G.S.

(b) Wiśniewski establishes that the life cycle of *Cyathocephalus truncatus* involves a gammarid (*Rivulogammarus spinicaudatus* and *Fontogammarus bosniacus*), and the trout. Eggs develop best in fish excreta and are eaten,

when mature, by a *Gammarus*. The onchosphere has neither hooks nor frontal glands. Medium sized gammarids are most susceptible and the development of the parasite is parallel with that of the host. Trout become infected through swallowing infected gammarids. The morphology of procercoïd, in which genitalia develop, and of plerocercoid is given. This parasite appears to be pathogenic in the trout but harmless in the *gammarus*.

S.G.S.

(c) Wiśniewski gives detailed descriptions and figures of *Coitocaecum testiobliquum* n. sp. and *Psilostomum progeneticum* n. sp.; two progenetic metacercariae from the body cavity of the gammarids *Rivulogammarus spinicaudatus* and *Fontogammarus bosniacus*. *C. testiobliquum* was also found in the adult condition in *Salmo fario* and *S. irideus*, while the definitive host of *P. progeneticum* is still unknown. The existence of progenesis results in the reduction of the length of the life cycle and is considered by the writer to be a form of neoteny, and to constitute evidence in support of Janicki's theory of secondary contraction of the life cycle of neotenic cestodes.

S.G.S.

(d) Sekulowicz finds that the monozoic cestode, *C. laticeps*, inhabiting the intestine of cyprinoid fishes, develops in the Oligochaets *Tubifex tubifex* Müll., and *T. barbatus* Grube. The larva is of the procercoïd type with a cercomer, and its infective stage resembles that of *Diphyllobothrium* or *Triaenophorus*. If not ingested at this stage by a fish the larval development continues but the cercomer is retained. Sexual organs develop only in the intestine of the fish.

S.G.S.

(e) Ruszkowski considers that *Grillotia erinaceus*, a marine cestode, has two intermediate hosts. The first is a copepod (either *Acartia longicornis*, *Pseudocalanus elongatus*, *Paracalanus parvus* or *Temora longicornis*). In the copepod the coracidium develops into a procercoïd provided with a cercomer. The life cycle is very similar to that of the known *Diphyllobothriidae* and is considered, by the writer, to be typical for those *Tetrarhynchs* whose larvae develop in fishes.

S.G.S.

361—Comptes Rendus des Séances de l'Académie des Sciences.

- a. GALLIEN, L.—“Sur la reproduction néoténique chez *Polystomum integrum* Froelich.” *CXCV* (21), 1852-1854. [May, 1932.]
- b. GALLIEN, L.—“Sur l'évolution de la génération issue des formes néoténiques de *Polystomum integrum* Froelich.” *CXCV* (1), 77-79. [July, 1932.]

(a) Gallien has confirmed the fact of occasional neoteny in *Polystomum integrum* in frogs, originally observed by Zeller. Normally, this trematode lays its eggs at the same time as does the host, *Rana temporaria*; the young larvae attach themselves to the internal gills of tadpoles, at the metamorphosis of which they migrate *via* the intestine to the bladder, becoming sexually mature in 3 years. However, if very young tadpoles with external gills are exposed to infection the parasites become sexually mature within a month while still attached to the gills as larvae.

B.G.P.

(b) Gallien has studied the development of the offspring of the so-called “neotenic” or “progenetic” races of *Polystomum integrum*, characterized by accelerated development. These oviposit while still immature and the ova give rise to a second generation of larvae infective to tadpoles. Gallien considers this neotenic reproduction to be a kind of paedogenesis analogous to the sporocyst stage in *Digenea*.

S.G.S.

362—Contributions to Canadian Biology and Fisheries.

a. NEWTON, M. V. B.—“The biology of *Triaenophorus tricuspidatus*, (Bloch 1779), in Western Canada.” n. ser. VII (24/30), 341-360. [1932.]

(a) An account is given of the incidence, morphology and biology of *Triaenophorus tricuspidatus* (Bloch 1779) in fishes in Manitoba. Owing to its presence in the cisco (*Leucichthys* sp.) the United States Government has recently placed restrictions on the importation of this lake fish from Canada. Newton believes that the first intermediate host is a copepod which it would be impossible to control. The second intermediary is the pike which likewise cannot be successfully controlled. Slightly infected pike can be used for human food.

R.T.L.

363—Cornell Veterinarian.

a. HALL, M. C.—“The war on livestock parasites.” XXII (4), 297-319, 1 map. [October, 1932.]

(a) In this article Hall gives a fairly detailed account of the chief measures to be employed against all the principal parasites (insect, helminthic and protozoal) of livestock. The simile of “war” is elaborately and consistently worked out, down to details of terminology. Thus the parasites are grouped according to their tactics and strategy (life history, infection route, etc) and for each group the appropriate offensive (therapeutic) and defensive (prophylactic) weapons are indicated. Measures are also outlined against the enemy’s allies (intermediate hosts). A “war map of campaigns” indicates the enemy’s numerous lines of communication when invading one territory from another and the points at which specified weapons may be usefully employed.

B.G.P.

364—Deutsches Archiv für Klinische Medizin.

a. HEILMEYER, L.—“Blutfarbstoffwechselstudien. Die Regenerations- und Farbstoffwechselvorgänge beim Morbus Biermer sowie bei einer Bothrioccephalusanaëmie vor und nach Leberbehandlung.” CLXXIII (2'3), 128-163, 53 refs. [1932.]

(a) Heilmeyer, describing blood regeneration and changes in the blood pigments in pernicious anaemia, before and after liver therapy, adds a section on Bothrioccephalus anaemia cases of which were examined by him. Apart from slight clinical differences, this anaemia corresponds closely with pernicious anaemia, the two being fundamentally different from other haemolytic anaemias.

B.G.P.

365—Dobutsugaku Zasshi.

a. KATAOKA, N. & MOMMA, K.—“A certain nematode parasitic in *Leptodora kindti* from Japan.” XLIV, pp. 323-326. [In Japanese: English summary pp. 325-326.] [1932.]

(a) In the abdominal cavity of *Leptodora kindti* collected from Lake Biwa, Kataoka and Momma found an immature form of the genus *Raphidascaris*. It resembles *R. biwakoensis* and *R. plecoglossi* in the presence of a cuticular horn-like process on the anterior extremity.

R.T.L.

366—Farmers' Bulletin.

a. THORNE, G.—“Control of sugar-beet nematode by crop rotation.” No. 1514, 20 pp. [February, 1932.]

(a) Thorne records the increased distribution of *Heterodera schachtii* on sugar beet in the central and western States of America, gives a brief account of the habits and economic importance of the nematode, and discusses the value of various crop rotations in reducing nematode damage.

Two year rotation is recommended for light infestations and four or preferably five year rotation for severe infestations. Alfalfa followed by legumes or potatoes has been found to give the best results. Early planting and abundant manurial treatment have been found to be advantageous. Cooperative action of growers and sugar companies in certain areas is already showing some effect in the increase of average tonnage and sugar content. M.J.T.

367—Fauna Arctica.

a. STEINER, G.—“Die arktischen Mermithiden, Gordioiden und Nectonematoiden.” VI (3), 161-174, 41 figs., 13 refs. [August, 1932.]

(a) Steiner briefly reviews our present knowledge of representatives of arctic Mermithidae, Gordiidae and Nectonemidae and deplores the fact that all the species hitherto encountered are but imperfectly known because of badly preserved or incomplete research material.

Of the Mermithidae, nine species are known; these are described and figured. Seven originate from arctic Sweden representing the genera *Pseudomermis*, *Limnomeris*, *Mesomeris* and *Hydromermis* including *Hydromermis bostrycodes* var. *philopyschra* n. var. From Novaya Zemlya comes a *Limnomeris* and from Alaska comes *Hexameris alaskensis* n. sp. All are fresh-water forms and have been found within the Arctic Circle except the last named which was recovered from Buckland River, a little south of the Arctic Circle. The insect hosts for all forms but the Novaya Zemlyan one, which is a Chironomid larva, are unknown.

Neither arctic nor antarctic Gordiidae are known but the author believes them to be represented, in the arctic regions at least, owing to *Gordius* spp. having been recovered in Finnish Lapland. A specimen of the Nectonemidae recovered from Dickson Bay in Spitzbergen is known; this is a marine form and is represented solely by a female worm. J.N.O.

368—Folha Medica.

a. PÓVOA, H.—“Cysticercose cerebral.” XIII (21), 241-246, 4 figs. [25th July, 1932.]

(a) Póvoa gives a general account of cerebral cysticercosis describing the life-history of the parasite and the distribution, incidence, pathogenesis, symptomatology, diagnosis and treatment of the disease. P.A.C.

369—Geflügelfarmer.

a. SPREHN, C.—“Einige wichtige Herbstkrankheiten des Geflügels.” No. 9, [Reprint 2 pp.], 6 figs. [September, 1932.]

(a) Sprehn discusses here the seasonal incidence of various poultry infections in autumn. There is among chicken a marked increase in *Davainea proglottina*, *Capillaria*, and *Ascaridia*, the two latter being also common at this time in pigeons. *Davainea* is especially prevalent in autumn owing to the fact that slugs, which are the intermediate hosts, propagate in the latter part of the summer. Prophylaxis consists in collecting these in damp weather or early morning, and in anthelmintic treatment. The drug “Helmidrast” is stated by the author to be effective against hookworms and tapeworms in poultry. For stomach worm in geese (*Amidostomum anseris*) carbon tetrachloride is usually recommended but Helmudrast is also efficacious. R.T.L.

370—Geneeskundig Tijdschrift voor Nederlandsch-Indië.

a. BRUG, S. L.—“Overbrenging van parasieten door insecten.” LXII (14), 883-888. [5th July, 1932.]
 b. VOS, J. J. T. & HENNEMANN, I. P.—“Experimenteel kankeronderzoek.” LXII (19), 1256-1262. [13th August, 1932.]

(a) Brug discusses insects as vectors of protozoal and helminthic parasites. B.G.P.

(b) In the course of a paper on the experimental production of cancer, Vos and Hennemann record the transplantation, through 17 generations of white rats, of liver sarcoma associated with cysticercus. The grafts were successful in about 80 per cent. of cases, but they failed to survive in a new series of wild rats. Of 1,000 wild rats, 689 were infected with cysticercus but showed no spontaneous sarcoma. 513 of these rats also harboured *Gongylonema neoplasticum* in the stomach, and 5.9 per cent. of this number showed papillomata in the stomach mucosa; there was no case of carcinoma, however. *Periplaneta australasiae* appears to be the local intermediary.

B.G.P.

371—Hong Kong Naturalist.

a. HOEPLI, R. & CHU, H. J.—“Free-living nematodes from hot springs in China and Formosa.” Supplement No. 1, pp. 15-28, 3 pls., 14 refs. [1932.]

(a) Hoepli and Chu describe the nematode fauna of thermal springs in five districts of China and Formosa.

Nematodes were found to exist at temperatures of from 34.5°C. to 51°C., although only larval forms occurred at above 40°C. Morphological descriptions are given of all species found, including *Greenia orientalis* n. g., n. sp., *Plectus chengmohliangi* n. sp., *Microlaimoides lingi* n. sp., *Cyatholaimus chungsani* n. sp., *Monhystrella ginlingensis* n. sp., and *Monhystera filiformis* var. *fukienensis* n. var. The fauna is considered to fall into two groups, (a) ubiquitous species which can adapt themselves to different osmotic pressures and temperatures, and (b) species more or less confined to thermal waters. M.J.T.

372—Imperial Bureau of Agricultural Parasitology. Notes and Memoranda.

- a. M. MacM. (M. J. Triffitt).—"‘Potato Sickness’ and the eelworm *Heterodera schachtii*." No. 6, 22 pp. [1932.]
- b. CAMERON, T. W. M.—“Helminthology in its application to live-stock.” No. 7, 8 pp. [1932.]

(a) Triffitt reviews the British literature on *Heterodera schachtii* as an aetiological factor in “Potato Sickness,” which is now so wide-spread in Britain.

The history of this parasite in Britain is briefly outlined, including its first recognition on hops (1895), oats (1908), wheat (1909), peas (1912), mangolds and cauliflowers (1928), beetroot (1929) and carrots (1931). It was first identified on potatoes in Scotland in 1913 and in England in 1917, but records of Potato Sickness date back to 1904. In some outbreaks the crop yield weighed less than the seed planted. The author briefly describes the biological strains of the parasite, its life-history and morphology, and passes on to the symptoms, aetiology and control of Potato Sickness. Published work is often capable of contradictory interpretation, but the general conclusion at the present time appears to be that Potato Sickness is due to infestation by *Heterodera schachtii* in the presence of some necessary additional factor, which may be a nutritional defect.

B.G.P.

(b) Cameron claims that helminths are as important in causing loss to the stock-owner as are bacteria and viruses; in some animals, particularly in temperate climates, they are more important and, as bacterial diseases come more under control, and agricultural science makes possible heavier flocks on the land, their importance will increase.

Prevention rather than cure is to be aimed at and this demands a rational application of the knowledge obtained in the laboratory of the life-cycles and bionomics of the parasites. All animal species carry worms and in the wild state at least three-quarters of all animals are infected; but it is only when animals are confined to limited areas that helminthic diseases develop. Helminths are more or less specific but many wild animals carry forms which can be transmitted to domestic animals related to them. There are over 800 recorded species of worms from domesticated animals and only a small fraction of these have been even partly investigated. Control measures which can be at present adopted in various important groups are discussed; e.g., ascarids, sclerostomes, gastro-intestinal trichostrongyles, lungworms, hookworms, tapeworms and liver-flukes.

T.W.M.C.

373—Indian Veterinary Journal.

- a. PANDA, P.—“Filariasis in dogs.” VIII (4), 241-250, 5 figs., [April, 1932.]
- b. GHOSAL, M. L.—“*Dracunculus medinensis* (Guinea-worm) in veterinary practice.” VIII (4), 264-265. [April, 1932.]
- c. RAO, M. A. N.—“A comparative study on cercarial fauna in Madras.” IX (2), 107-111, 2 pls., 9 refs. [October, 1932.]
- d. SINGH, U. S. & HICKEY, S. G. M.—“An investigation into the control of fascioliasis in cattle.” IX (2), 123-128. [October, 1932.]

(a) Panda records unsheathed microfilariae, probably *Mf. repens*, in the blood of nearly 10 per cent. of "a large number" of dogs in Patna. The adults, found in subcutaneous tissues, are not described. Pre-natal transmission from infected bitches to their pups was not found to occur. Treatments with various anthelmintics were not satisfactory. B.G.P.

(b) Ghosal records a case of *Dracunculus medinensis* in a horse near Bikaner (India). The worm emerged at the fetlock and was satisfactorily removed by intermittent traction. B.G.P.

(c) In the Spur Tank, Egmore, Madras, eleven species of cercariae were found by Rao in *Planorbis exustus* and *Lymnaea leuteola*. Three are described as new. The infection rates of the snails were plotted out monthly. By experimental infection of calves *Cercariae Indicae* xxvi (Sewell) proved to be *Paramphistomum cervi*, and xxix (Sewell) to give rise to *Fischoederius elongatus*. xxiii (Sewell) gave rise in dogs and cats to a species of *Euparyphium* resembling *E. malayanum*. R.T.L.

(d) Singh and Hickey report heavy mortality of cattle in the Almora district of the Lower Himalayas (U.P.) due to infection of the liver with *Fasciola gigantica*, and here give the results of anthelmintic tests with Danistol and carbon tetrachloride. The curative effects, toxicity, and cost of the two drugs are briefly compared and it is concluded that, while Danistol is more efficacious and less toxic than carbon tetrachloride it is too expensive for mass treatment. B.G.P.

374—Internationale Revue der Gesamten Hydrobiologie und Hydrographie.

a. FINDENEGG, J.—"Die Gyrodactyluserkrankung der Karpfen und ihre Bekämpfung." xxvi (3/4), 316-322, 2 figs. [1932.]

(a) Findenegg treats carp infected with Gyrodactylus by bathing them for 15 minutes in a 2½ per cent. solution of common salt and washing them for about 12 hours in running water. Most of the parasites are killed and the survivors fall off with the mucus, particles of which are swept away by the running water, thus avoiding re-infection. B.G.P.

375—Jahres-Bericht der Schlesischen Gesellschaft für Vaterländische Cultur.

a. LENTZE, F. A.—"Versuche über die Entwicklungsbedingungen der Eier des *Oxyuris vermicularis*." civ, pp. 51-53. [1932.]

(a) Lentze here gives the results of some experiments on the viability of *Enterobius vermicularis* eggs under various conditions.

The tadpole-stage embryo within the freshly deposited egg requires oxygen, as well as moisture and a temperature between 30° and 36°C., in order to become an infective larva, so that hatching within the gut is highly improbable. Koch's recommendation, that infected children should wear linen drawers at night, may be of little use since the eggs can fall through the meshes of the material. Even under optimum physical conditions the eggs remain alive for only 14 days; they live for a day, however, in strong soapy water. Immature eggs are killed by gastric juice of normal acidity, and even mature eggs fail to hatch if the gastric ferments are destroyed by heat. B.G.P.

376—Japanese Journal of Dermatology and Urology.

a. KITAMURA, K. & TAKADA, I.—“ Histopathologische Kenntnisse des Lymphangiendothelioms des Hodens bei Filariakranken.” XXXII (9), 818-824, 3 figs., 2 pls. [In Japanese : German summary p. 110] [1932.]

(a) Kitamura and Takada describe a case of long-standing filariasis with tumour-like swelling of one testis, prostate, and inguinal and femoral glands. After the extirpation of the testis and an inguinal gland, histological examination showed marked proliferation of lymphoid endothelial cells, cell masses invading the connective-tissue stroma of the testis. The seminiferous tubules showed atrophy and fatty degeneration. In the inguinal gland the normal glandular structure was entirely destroyed. B.G.P.

377—Journal of the Chosen Medical Association.

a. TAKEMURA, S.—“ Studies on effects of roundworm tissue fluid and of certain drugs on development of roundworm eggs (*Ascaris lumbricoides*).” XXII (10) [In Japanese ; English summary p. 63]. [20th October, 1932.]

(a) Peptone and macrin solutions interfere with the development of *Ascaris lumbricoides* eggs if in concentrations of over 5 per cent. So also does the tissue fluid of the adult worm but in all three cases formalin neutralizes the inhibitory action. Sterilized bile 2 per cent. to 10 per cent. is not inhibitory and the addition of formalin accelerates development. Takemura finds that the most effective inhibitory factor is putrefaction. R.T.L.

378—Journal of the Linnean Society (Zoology).

a. KREIS, H. A.—“ Reports of an Expedition to Paraguay and Brazil in 1926-7, supported by the Trustees of the Percy Sladen Memorial Fund and the Executive Committee of the Carnegie Trust for the Universities of Scotland. Freshwater Nematoda from the Paraguayan Chaco.” XXXVIII, pp. 55-90, 11 figs., 16 refs. [27th June, 1932.]

(a) Kreis separated from a plankton collection 365 nematodes belonging to 10 genera and 19 species. One genus *Enoplochilus* is new. 5 new species are described, viz., *Aphanolaimus duodecim-papillatus*, *Trilobus parvipapillatus*, *Enoplochilus obtusicaudatus*, *Dorylaimus paraguayensis*, and *Dorylaimus homalopapillatus*. R.T.L.

379—Journal of Mammology.

a. RUSH, W. M.—“ *Diphyllobothrium latum* in bear.” XIII (3), 274-275. [August, 1932.]

(a) In a black bear autopsied at Yellowstone Park, Rush found about 100 *Diphyllobothrium latum* varying from 46 to 84 cms. in length. Five bears were caught alive in this region and were treated with Kamala and three passed *D. latum*. Five bears which were trapped at Beaver Lake about 20 miles distant were uninfected. R.T.L.

380—Journal of the Public Health Association of Japan.

a. AKAMATSU, A.—“The significance of Japanese weasels as the last host of *Hepar Distoma*—*Clonorchis sinensis*, *Distomum Innocum Spalthum*.” VIII (10) [In Japanese; English summary pp. 3-4]. [October, 1932.]

(a) Yoshida's discovery that weasels in Japan are naturally infected with *Clonorchis sinensis* has been experimentally verified by Akamatsu. Eggs were found in the faeces between the 15th and 21st days after feeding with encysted cercariae. Icterus was absent, the chief symptom noted was chronic enteritis.

R.T.L.

381—Journal of the Washington Academy of Sciences.

a. COBB, N. A.—“*Metoncholaimus pristurus* (zur Strassen); a nema suitable for use in laboratory courses in zoology.” XXII (12), 344-354, 3 figs. [19th June, 1932.]

(a) A detailed description of the morphology of *Metoncholaimus pristurus* is given in the hope that it may provide the teacher of zoology the necessary information for the adequate teaching of the morphology of the important nemic phylum.

R.T.L.

382—Lingnan Science Journal.

a. RILEY, W. A. & CHEN, H. T.—“Trichinosis in China: negative results of examination of pigs and rats at Canton.” XI (3), 465-467, 6 refs. [July, 1932.]

(a) Riley and Chen examined diaphragms of 313 hogs slaughtered at a Canton abattoir and 32 house rats. None of these contained *Trichina*. They suggest therefore that trichinosis must be rare in South China. P.A.C.

383—Medical Parasitology and Parasitic Diseases.

a. SHIKHOBALOVA, N.—“A mass campaign against Ascaridiosis in the population of a kolkhoz near Moscow.” I (1), 37-45, 6 tables, 8 refs. [In Russian.] [1932.]

b. TAREEFF, E., OSHEROVA, F. & RASKIN, A.—“Contribution to the clinic of Trichinellosis.” I (1), 45-49, 6 pls., 20 refs. [In Russian.] [1932.]

c. TARASSOFF, W.—“On the differential diagnosis of real and pseudo-Dicrocoeliosis.” I (1), 50-52, 9 refs. [In Russian.] [1932.]

d. ANON.—“Projecting the anthelmintic campaign for the second Five Year Plan period.” I (3/4), 117-119. [In Russian.] [1932.]

e. SKRJABIN, K.—“Opisthorchosis as a sanitary and economical problem of the Soviet northern territories.” I (3/4), 120-121. [In Russian.] [1932.]

f. SKRJABIN, K.—“Statistics and geographical distribution of Opisthorchosis.” I (3/4), 122-123. [In Russian.] [1932.]

g. SKRJABIN, K. & PODYAPOLSKAYA, W.—“Opisthorchosis infections as occurring among the populations of the minor nationalities of the North.” I (3/4), 124-127, 1 table. [In Russian.] [1932.]

h. SKRJABIN, K., PODYAPOLSKAYA, W., SHIKHOBALOVA, N. & VASSILKOVA, Z.—“Opisthorchosis among the workmen of the tinned fish factories in the Northern Tobolsk Region.” I (3/4), 127-128. 1 table. [In Russian.] [1932.]

i. SKRJABIN, K.—“About the fight against opisthorchosis in the Northern Tobolsk Region.” I (3/4), 129. [In Russian.] [1932.]

j. PLOTNIKOFF, N. & ZERTSHANINOFF, L.—“Some biological observations on *Opisthorchis felineus* (Rivolta, 1884) and about the treatment of opisthorchosis.” I (3/4), 130-139, 1 table. [In Russian.] [1932.]

k. KONDRAТЬЕВ, W.—“On the clinical manifestations of opisthorchosis and about its treatment.” I (3/4), 140-143, 6 refs. [In Russian.] [1932.]

1. ZHELTIKOFF, V. S.—“Anatomico-pathological findings in human hepatic opisthorchosis.” 1 (3/4), 143-144. [In Russian.] [1932.]
- m. KREPKOGORSKAYA, T.—“Case of infantile opisthorchosis in Kazakhstan.” 1 (3/4), 144. [In Russian.] [1932.]
- n. BOL, B. & YAKOVLEFF, I. “Anatomico-pathological picture of the cat's liver in opisthorchis-infection.” 1 (3/4), 145, 3 figs. [In Russian.] [1932.]
- o. LIOUBAVSKY, A. “Hepatic opisthorchosis in the Polar fox.” 1 (3/4), 145. [In Russian.] [1932.]
- p. SKRJABIN, K. & SCHULTZ, R.—“Bibliography of opisthorchosis.” 1 (3/4) 146-147. [In Russian.] [1932.]
- q. PODYAPOLSKAYA, W.—“Methods in the organization of medical helminthological expeditions.” 1 (3/4), 147-156. [In Russian]. [1932.]
- r. SKRJABIN, K. & PODYAPOLSKAYA, W.—“Instructions for the control of *Enterobius vermicularis*.” 1 (3/4), 157-162. [In Russian.] [1932.]
- s. PAVLOVSKY, E.—“Self supply on economical lines of parasitological material for the practical studies in Parasitology.” 1 (3/4), 176-181. [In Russian.] [1932.]

(a) Shikhobalova gives a detailed account of a campaign against ascariasis in 3 collective farms near Moscow, two of which were mainly concerned with growing cucumbers in greenhouses manured largely with night soil.

Liquid manure made from night soil was found to contain 3,300 embryonated ascaris eggs per 100 gm.; eggs were also demonstrated in the soil and in detritus from under the finger-nails of workers. Of 1,309 persons of all ages 80 per cent. were infected with ascaris or trichuris or both, to the extent of 1,560 (ascaris) and 90 (trichuris) eggs per gm. The campaign, which was of 6 weeks' duration, included compulsory examination, educational propaganda, treatment with santonin, and an agreed plan for future prophylaxis and treatment. Data are tabulated and analysed under occupational groups.

B.G.P.

(b) Tareeff, Osherova and Raskin discuss the diagnostic, clinical and therapeutic aspects of trichinelliasis in man, in the light of 3 cases in one family which came under their observation, and with regard to recent developments in the literature.

B.G.P.

(c) Tarassoff points out that there are numerous fallacious records of dicrocoeliasis in man, owing to the fact that eggs ingested with raw liver pass through the alimentary tract practically unchanged. Even when the liver is cooked it is often difficult to distinguish the contained eggs from living ones. The only reliable diagnostic method is repeated examination of faeces over a period during which liver is excluded from the diet.

B.G.P.

(d) An editorial briefly recounts what has been done in Russia to deal with human helminthiasis since the Revolution, what is now in progress, and what is to be undertaken during the 2nd Five-Year Plan. The latter, drawn up in the form of a syllabus, shows that fundamental work is projected on all the common helminths of man. The urgency of educating not only medical men and helminthologists in large numbers but also the general masses, is stressed.

B.G.P.

(e) In this and the following 4 papers Skrjabin and his co-workers discuss the problem of opisthorchiasis in man in the northern Tobolsk region. Here, in the lower basin of the river Ob, is a backward people amongst whom opisthorchiasis is very common, often in the form of very heavy infections; in one case the liver contained some 25,000 flukes. Raw fish is the fundamental element in the diet of this people.

B.G.P.

(f) Skrjabin gives an account of the incidence, intensity, and geographical distribution of opisthorchiasis in man and animals in Russia. Incidence and intensity rise fairly uniformly to a maximum in the Tobolsk region, in dog, cat and man, the eastern limit of the infection being the Ob watershed. The absence of the infection eastward of this line may be due to the absence of the first intermediary.

B.G.P.

(g) Skrjabin and Podyapolskaya show, from the findings of the 70th Helminthological Expedition, that man in the lower Ob valley is infected with *Opisthorchis felineus* to the extent of 85.2 per cent., and with *Diphyllobothrium latum*, 43.9 per cent.; other helminths are rare. The incidence of opisthorchiasis was highest among the Voguls: 90 per cent.

B.G.P.

(h) Skrjabin *et al.* examined 111 workers at fish-canning factories at Tobolsk and, much further north, Oksarsk, with a view to seeing whether opisthorchiasis is a vocational disease. The incidence was 81 per cent. Data for this and other helminthic infections are tabulated according to sex and location. General eosinophilia was common, usually below 20 per cent. but in one case as high as 60 per cent.

B.G.P.

(i) Skrjabin states that, since the time of the 70th Expedition, yearly expeditions have been made from a centre at Sverdlovsk to the Tobolsk region in order to study biological and epidemiological problems associated with opisthorchiasis. Ignorance of the first intermediary and local conditions near and within the arctic circle constitute difficulties in the way of control.

B.G.P.

(j) Plotnikoff and Zertshaninoff report on the incidence of the second intermediaries of *Opisthorchis felineus* in the Tobolsk region, on biological factors influencing the metacercariae, and on preliminary experiments with anthelmintics for use against this parasite.

The following fish are definitely implicated, as proved by experimental feeding to young kittens and guinea pigs: *Rutilus rutilus lacustris*, *Leuciscus idus*, and *L. leuciscus baicalensis*. The incidence of *Opisthorchis* may be as high as 89.3 per cent. in fish of 5 to 9 years old, and the intensity of infection per fish may exceed 1,000 metacercariae. The outer cyst wall is removed by gastric juice but duodenal secretions are necessary for hatching from the inner membrane. Dissected cysts are viable for as long as 45 days in normal saline. The salting of fish causes death to the cercariae within 10 days, and curing is immediately lethal. They remain alive for at least 3 days when the fish is exposed to temperatures below zero.

Experiments *in vitro* and *in vivo* with carbon tetrachloride, gentian violet and antimony tartrate gave the following results. *In vitro* all were toxic to the flukes. In cats carbon tetrachloride was very effective, but gentian violet more toxic to the cat than to the fluke. The two drugs, given in succession to cats, form a promising treatment. Antimony tartrate proved toxic to cats.

B.G.P.

(k) Kondratyeff describes the clinical syndrome of human opisthorchiasis, as observed in 8 cases, reveals liver dysfunction, and concludes from the use of antimony compounds that these are valueless, or even dangerously toxic.

B.G.P.

(l) Zheltikoff describes the morbid anatomy of a fatal human case of opisthorchiasis. The live lesions include a circumscribed fibrosis of the bile ducts with some epithelial proliferation. B.G.P.

(m) Krepkogorskaya records a case of opisthorchiasis in a child of 9 at Alma-ata where the disease was hitherto unknown. B.G.P.

(n) From the examination of 12 cats' livers infected with *Opisthorchis felineus*, Bol and Yakovlev find that the typical lesions are those of catarrhal inflammation of the bile ducts with sometimes epithelial proliferation and sometimes cystic dilatation. B.G.P.

(o) Lioubavsky records an epizootic of opisthorchiasis in polar foxes at the Tobolsk Zoological Farm in 1929. One fox which died had 15,000 flukes in the liver and gall bladder and about 1,500 in the intestines. B.G.P.

(p) Skrjabin and Schultz present a bibliography of opisthorchiasis arranged under two divisions : Russian publications (30 titles) and extraneous (13 titles)—the latter being in Roman script. B.G.P.

(q) Podyapolskaya explains in detail how the well-known medical helminthological expeditions in U.S.S.R. are organized, and shows how they have revealed interesting anomalies in the distribution of helminths. B.G.P.

(r) Skrjabin and Podyapolskaya present a technical account of the diagnosis, therapy and prophylaxis—personal and social—of *Enterobius vermicularis* infections. This is the first of a series of "instructions" intended for the use of various medical organizations in their fight against helminthiasis. In the section on therapy the inefficacy of enemata is stressed, and Santonin *per os* is chiefly recommended. B.G.P.

(s) Pavlovsky discusses the difficulty of obtaining in Russia adequate material for the study of parasitology, particularly in the medical schools where it is a rapidly growing subject. He gives a list of desirable teaching material followed by a list of institutions in Russia and the material they can provide. B.G.P.

384—Memorias do Instituto Oswaldo Cruz.

a. TRAVASSOS, L. & VOGELSANG, E.—“Pesquisas helminthologicas realizadas em Hamburgo. X. Contribuicao ao conhecimento das especies de *Oesophagostomum* dos primatas.” xxvi (3), 251-328, 198 figs., 5 tables, 223 refs. [December, 1932.]

(a) Travassos and Vogelsang in this extensive survey of the species of *Oesophagostomum* in primates, have reviewed the whole genus, although descriptions of non-primate forms are not given.

They have created two new sub-families of the *Strongylata*—viz., *Ransominae*, *Globocephalinae* (both in the *Strongylidae*) and a new family *Stephanuridae* in the *Strongyloidea*. They recognize the various subgenera of *Oesophagostomum* (*Hysteracrum*, *Bosicola*, *Proteracrum* and *Conoweberia*) and create a new one, *Ihleia*. The oesophagostomes from primates are :—

O. (*Conoweberia*) *birfurcum*, from man, apes and old world monkeys.

(Synonym : *O. brumpti*, *O. maurum*, etc.)

O. (*Conoweberia*) *pachycephalum*, *Cercopithecus* spp.

O. (Conoweberia) aculeatum, from old and new world monkeys. (Synonym : *O. apistostomum*).
O. (Conoweberia) blanchardi, from Simla and *Hylobates*.
O. (Conoweberia) zukowskyi, from *Papio*.
O. (Conoweberia) raillieti sp. nov., from *Hylobates hoolock*.
O. (Conoweberia) ovatum, from *Hylobates*. (Not described in detail).
O. (Ihleia) stephanostomum, from man and apes.

A complete host list is given.

T.W.M.C.

385—Mitteilungen aus der Medizinischen Akademie zu Kioto.

a. NAKANO, T. & MASUMOTO, K.—“ Ein Fall von spontanem chronischem Magengeschwür durch Verstopfung in den Blutgefäßen der Magenwand verursacht von einem Schmarotzertier.” VI (5), 2543-2544. [1932.]

(a) Spontaneous chronic round gastric ulcer near the ring of the pylorus is rare in rabbits. It is due, according to Nakano and Masumoto, to obstruction of the blood vessels of the gut wall by a filarial worm. R.T.L.

386—Monatsschrift für Unfallheilkunde.

a. FUNCCIUS, B. & KRAUS, H.—“ Gehirncysticerken und Unfallbegutachtung.” XXXIX, pp. 161-166. [1932.]

(a) Funccius and Kraus discuss the diagnosis of human cerebral cysticercosis from the forensic standpoint. In some cases cysticercosis can be diagnosed from clinical symptoms ; in others it can be definitely shown by post-mortem examination to have been the cause of death. There remains a group of cases in which cysticerci are found post-mortem but the actual cause of death remains obscure, owing to the presence of other diseases. The authors describe two cases of this kind, in both of which the question of liability was involved. B.G.P.

387—Nederlandsch Tijdschrift voor Geneeskunde.

a. HALBERTSMA, J. J.—“ Over het voorkomen van een *Cephalobus*-soort in den Retentie-inhoud van de maag.” LXXVI (22), 2625-2626. [28th May, 1932.]

(a) Halbertsma records the finding of abundant living specimens of *Cephalobus* sp. in the gastric retention of a patient suffering from pyloric obstruction.

The nematodes remained alive for a period of three days, a fact which is attributed to a diet of salads before the examination was carried out, together with a low concentration (0.1 per cent.) of hydrochloric acid. M.J.T.

388—Nuovo Ercolani.

a. GIOVINE, D.—“ Le più comuni malattie infettive e parassitarie del bestiame della Colombia.” XXXVII (5), 89-96, & (6), 101-107. [15th & 31st March, 1932.]

(a) In the course of a brief account of the commoner infective and parasitic diseases of animals in Colombia, Giovine mentions (pp. 103-105)

a number of helminthic infections. In addition to universally distributed parasites he notes the presence of *Stephanurus dentatus* in pigs and the tolerable frequency of *Syngamus laryngeus* on the laryngeal mucosa of cattle inspected at the Bogota abattoir.

B.G.P.

389—Nyt Magazin for Naturvidenskaberne.

a. ALLGÉN, C.—“Weitere Beiträge zur Kenntnis der marinischen Nematodenfauna der Campbellinsel.” LXX, pp. 97-198, 48 figs. [1932.]

(a) Allgén adds considerably to our knowledge of the free-living marine nematodes of Perseverance Harbour, Campbell Island. Of the 63 species described 49 are new and of the 32 genera represented, one newly-named *Southerniella* with type and only species *S. simplex* n. sp., is near to *Chromagaster*.

R.T.L.

390—Okayama-Igakkai-Zasshi.

a. SHIGENOBU, T.—“Über die quantitative Veränderung einiger Substanzen des Blutes bei der Kaninchenchlonorchiasis.” XLIV (5), 1099-1112. [In Japanese; German summary p. 1099.] [May, 1932.]

(a) Shigenobu reports that, in a rabbit experimentally infected with *Clonorchis sinensis*, there was an increase of inorganic phosphorus, sulphur, cholesterol and lactic acid in the blood and a decrease of serum calcium, coinciding with the onset of marked symptoms of the infection.

B.G.P.

391—Orvosi Hetilap.

a. LÖRINCZ, F. & BODROGI, G.—“Adatok az emberi echinococcosis gyakoriságáról Magyarországon.” LXXVI (32), 711-715, 6 tables, 11 refs. [13th August, 1932.]

(a) Lörincz and Bodrogi present data on the frequency of hydatid disease in man in Hungary as revealed by post-mortems. [The data appear to be those summarized in a previous article; see Helm. Abs., I, No. 36c.]

B.G.P.

392—Peking Natural History Bulletin.

a. HOEPLI, R.—“Animal life in thermal waters.” VI (3), 75-82, 24 refs. [1932.]

b. HSU, H. F.—“A study of some parasitic nematodes from Tonkin, Indo-China and of *Strongyluris brevicaudata* Mueller, 1894 from Hainan Island, South China.” VII (2), 99-115, 3 pls., 6 refs. [December, 1932.]

(a) Hoepli gives a useful review of the factors influencing animal life in thermal waters and refers, among other groups, to some of the nematodes which have been found in this habitat. Nematodes have been found at a temperature as high as 53°C., and among the species recorded a few are considered as more or less specific for thermal waters.

D.O.M.

(b) Eleven well-known species of nematodes have been collected by Hsü. His descriptions reveal new and interesting morphological details and certain features hitherto overlooked have been noted.

R.T.L.

393—Plant Disease Reporter.

- a. CUNNINGHAM, H. S.—“Root-knot on Long Island potatoes.” *xvi* (1), 2. [1932.]
- b. STEINER, G.—“Notes on nemic diseases.” *xvi* (1), 2-3. [1932.]
- c. STEINER, G.—“Notes on nemic diseases.” *xvi* (2), 17. [1932.]
- d. POOLE, R. F.—“Root-knot in North Carolina.” *xvi* (2), 17. [1932.]
- e. STEINER, G. & BUHRER, E.—“New hosts of plant-parasitic nemas.” *xvi* (5), 54-55. [1932.]
- f. STEINER, G. & BUHRER, E. M.—“*Pathoaphelenchus fragariae* (Ritzema Bos) attacking bulbous iris.” *xvi* (7), 68-69. [1932.]
- g. STEINER, G. & BUHRER, E. M.—“A list of plants attacked by *Tylenchus dipsaci*, the bulb or stem nema.” *xvi* (8), 76-85. [1932.]
- h. HASTINGS, R. J., NEWTON, W. & STEINER, G.—“Root decline of narcissi.” *xvi* (11), 112-113. [1932.]
- i. CHRISTIE, J. R.—“Recent observations on the strawberry dwarf nematode in Massachusetts.” *xvi* (11), 113-114. [1932.]
- j. NEWHALL, A. G.—“Eradication of the bulb nema *Tylenchus dipsaci* from the New York onion district.” *xvi* (12), 136-137. [1932.]
- k. STEINER, G. & BUHRER, E. M.—“Miscellaneous notes on nematode diseases.” *xvi* (12), 137. [1932.]
- l. STEINER, G., BUHRER, E. M. & LIMBER, D. P.—“*Tylenchus dipsaci* on Colchicum.” *xvi* (13), 146. [1932.]

(a) Cunningham records the occurrence of the root-knot nematode, *Caconema radicicola*, causing severe damage to potatoes in two areas in eastern Long Island. M.J.T.

(b) Steiner records the occurrence of *Pathoaphelenchus* spp. associated with certain pathogenic symptoms in plants. The nematodes, not here described, were associated with a wood stain in long leaf pine in Louisiana and Texas, and with disease in a sugar cane plant from Jamaica. M.J.T.

(c) Steiner records the finding of *Tylenchus tritici* in wheat received from China, *Tylenchus dipsaci* in onions from England and Holland and in Irish potatoes shipped from England, and a case of *Tylenchus pratensis* seen for the first time in cyclamen roots. M.J.T.

(d) Poole notes the increased distribution of root-knot damage on a wide range of cultivated plants in North Carolina and mentions the satisfactory results of an experimental treatment of soil with ground sulphur.

The spread of infection is attributed largely to transportation of infected stock and the disease occurs on clay as well as sandy soils. No infections were found on a susceptible variety of sweet potato grown in infested soil treated with 400 and 600 lbs. of ground sulphur per acre, and a comparatively light infection occurred where a dressing of 200 lbs. per acre had been given. M.J.T.

(e) Steiner and Buhler record three new hosts for *Caconema radicicola*, viz., *Astragalus sinicus*, *Acer japonicum*, and *Bigonia capreolata*, and one new host *Papaver orientale* for *Neotylenchus abulbosus*, the nematode in this case being present in black spots on the leaves. M.J.T.

(f) Steiner and Buhler record the resistance of *Pathoaphelenchus fragariae* in iris bulbs to hot water treatment.

Bulbous iris which was known to be infected with *Tylenchus dipsaci* was planted after three hours treatment at 110°F. Subsequent examination

showed that although the infection of *T. dipsaci* had been eradicated the bulbs were heavily infested with a *Pathoaphelenchus* sp., probably *P. fragariae*.

M.J.T.

(g) Steiner and Buhrer list 195 hosts of *Tylenchus dipsaci* many of which have not previously been recorded. Plant species which are known to be attacked in the United States are specially indicated.

M.J.T.

(h) Hastings, Newton and Steiner record the occurrence of certain nematodes associated with the fungus *Cylindrocarpon* in a root rot of narcissi in British Columbia. Nematodes of the genera *Cephalobus* and *Diplogaster* were most numerous but *Tylenchus pratensis* also occurred and is thought to be the primary cause of the "root decline," the other organisms being secondary parasites.

M.J.T.

(i) Christie records observations on the distribution and pathogenicity of *Aphelenchoïdes fragariae* on strawberries in the Cape Cod District.

The nematode, supposedly introduced in 1930, was found on both healthy and diseased plants in 1932. No very marked pathogenic symptoms had previously been observed and the damage in 1932 is attributed to summer drought following winter conditions favourable to the nematode. The occurrence of the infection on a local variety, "Howard 17," is concluded to be unrelated to the original importation of infected "Blakemore" plants and neither range nor destructiveness of the pest is thought to be increasing.

M.J.T.

(j) Newhall records the successful eradication of an outbreak of *Tylenchus dipsaci* in an onion-growing district. The infected area, about one-third of an acre in size, was treated by the inverted pan method of steam sterilization. No further outbreaks have occurred in the vicinity.

M.J.T.

(k) Steiner and Buhrer record the finding of *Caconema radicicola* infecting a new host, *Hedychium gardnerianum*, the Indian gingerlily, and two nematode parasites, *Tylenchus dipsaci* and *Aphelenchoïdes fragariae* infecting specimens of *Phlox decussata* from Maryland and Washington respectively.

M.J.T.

(l) Steiner, Buhrer and Limber record a new host, *Colchicum speciosum album*, of *Tylenchus dipsaci*. The infested bulbs were imported from Holland.

M.J.T.

394—Policlinico (Sezione Pratica).

a. CAPUA, A.—"Su di un caso di cisticercosi dei muscoli." **xxxix** (32), 1240-1244. [8th August, 1932.]

(a) Capua presents a case of cysticercosis cellulosa that was accidentally discovered at a radioscopic examination; he suggests that this method will reveal the infection, at least if the cysts are calcified, when other methods fail. Seven skiagrams are reproduced.

B.G.P.

395—Prace Wydziału Chorób Roślin Państwowego Instytutu Naukowego Gospodarstwa Wiejskiego w Bydgoszczy.

a. KÉLER, S.—"Szkodniki roślin rolniczych i ogrodniczych w Wielkopolsce i na Pomorzu w latach 1926, 1927 i 1928." No. 12, 22 pp. [1932.]

(a) Kéler records the eelworm infestations found in West Poland during the years 1926 to 1928. In many instances free-living forms were found in material suffering from fungus diseases. Of these, *Diplogaster longicauda* in rotting potatoes, and *Plectus* sp. in grain and greenhouse lupins were particularly common. Only two cases of *Tylenchus dipsaci* were found, and these occurred on clover and buckwheat, both in 1927.

M.J.T.

396—Prager Archiv für Tiermedizin und Vergleichende Pathologie.

- a. ULLRICH, K.—“Die Magenwurmseuche der Gänse.” **XII** (3), 61-68 [March, 1932.]
- b. FREUND, L.—“Parasitologische Zeitfragen. II. Die Bedeutung der speichernden Reinfektion.” **XII** (3), 69-74. [March, 1932.]

(a) *Amidostomum anseris* causes stomach worm disease in geese chiefly in the summer months according to Ullrich. The pathological changes in the gizzard are described. There is a surprising absence of eosinophilic infiltration even where numerous worms are present. The effects of the worms are ascribed to loss of blood, mechanical delay and toxic action. A single dose of 2 c.cm. of carbon tetrachloride mixed with sifted flour is given by a rubber tube to the fasting adult goose. Although the parasite occurs also in ducks no fatal epidemics have been recorded in them.

R.T.L.

(b) Dr. Freund develops the idea of a distinction between normal and pathological parasitology—the latter resulting from the interference of man with the open range of animal life. In Zoological Gardens owing to changes in environment and food animals frequently lose their parasites but in the industry of breeding caged animals, e.g., fur-bearing animals, the conditions of the floor are often favourable for the hatching of helminth eggs unless cement, board, or wire floors are adopted. A study of the rate of accumulation and normal loss of parasites promises information of great practical value.

R.T.L.

397—Proceedings of the American Philosophical Society.

- a. TYZZER, E. E.—“Problems and observations concerning the transmission of blackhead infection in turkeys.” **LXXI** (6), 407-410. [1932.]

(a) The causal organism of blackhead is carried by the eggs of *Heterakis gallinae*, the caecal worm of chickens. The presence of the organism has not been demonstrated in the egg but it has been found inhabiting certain parts of the intestinal tract of growing worms and it is suggested that the eggs become impregnated during copulation.

P.A.C.

398—Proceedings of the Imperial Academy, Tokyo.

- a. OZAKI, Y.—“A new trematode from file-fish: *Lepotrema clavatum* n. g., n. sp.” **VIII** (2), 44-47, 3 figs., 6 refs. [February, 1932.]
- b. OZAKI, Y.—“A new trematode worm of the family Acanthostomidae.” **VIII** (9), 450-453, 4 figs., 9 refs. [November, 1932.]

(a) Ozaki has found in the intestine of *Monacanthus cirrifer*, a file-fish occurring in Japan from Otaru to Nagasaki, a new genus allied to the Lepocreadiinae named *Lepotrema* with *L. clavatum* as type and only species. The chief distinctive generic characters are the position of the genital aperture just behind the intestinal bifurcation and the presence of a small genital sucker lying directly inside of the end part of the metraterm.

R.T.L.

(b) A second genus of Acanthostomidae, closely allied to *Isocoelium*, is described from the intestine of *Uranoscopus japonicus* under the name *Paraisocoelium exorchis* n.g., n. sp. [The generic diagnosis does not specify the differential characters.]

R.T.L.

399—Proceedings of the Zoological Society of London.

a. REES, F. G.—“An investigation into the occurrence, structure, and life-histories of the trematode parasites of four species of *Lymnaea* [*L. truncatula* (Müll.), *L. pereger* (Müll.), *L. palustris* (Müll.), and *L. stagnalis* (Linné)], and *Hydrobia jenkinsi* (Smith) in Glamorgan and Monmouth.” Part I, pp. 1-32, 15 pls. [1932.]

(a) Dr. Gwendolen Rees has carried out an intensive study of the larval trematodes parasitizing four species of *Lymnaea* in the counties of Glamorgan and Monmouth in South Wales.

The snails examined were *Lymnaea truncatula*, *L. pereger*, *L. palustris* and *L. stagnalis* and in these, ten different species of cercariae were found, seven of which were identified with previously recorded species while three, *Cercaria Y*, *Cercaria Z* and *C. cambaensis* III are new to science. The paper is illustrated and contains many new observations on the structure and life-history of these parasites. An examination of *Hydrobia jenkinsi* was also carried out but with negative results.

D.O.M.

400—Puerto Rico Journal of Public Health and Tropical Medicine.

a. GIRGES, R.—“The clinical aspect of Schistosomiasis mansoni.” VIII (2), 99-148, 3 pls. [In Spanish : pp. 149-192.] [December, 1932.]

(a) Girges describes at length the clinical picture and diagnosis of the two chief types of *Schistosoma mansoni* invasion, viz., the intestinal type and the visceral called Egyptian splenomegaly.

R.T.L.

401—Quarterly Review of Biology.

a. FAUST, E. C.—“The excretory system as a method of classification of digenetic trematodes.” VII (4), 458-468, 22 figs., 58 refs. [December, 1932.]

(a) The correlation between life-cycle criteria and excretory pattern in digenetic trematodes shows that the excretory system affords data for a natural classification. Faust outlined such a classification, comprising mainly human parasites, in 1929 ; he here extends this system considerably on the basis of new data regarding excretory patterns.

The sub-class *Digenea* is divided into two orders, *Gasterostomata* and *Prostomata* the latter being subdivided into 5 suborders ; *Aspidogastrata* nom. nov., *Monostomata*, *Strigeata* (including the *Schistosomatoidea*), *Amphistomata* and *Distomata*. There is a further subdivision into superfamilies and families but the scheme is only partially complete since the excretory patterns of numerous genera remain unknown at present. The paper includes 22 figures of representative excretory systems.

B.G.P.

402—Records of the Indian Museum.

- a. MAPLESTONE, P. A.—“ Parasitic nematodes obtained from animals dying in the Calcutta Zoological Gardens, Pts. 9-11.” *XXXIV* (3), 229-261, 67 figs., 3 refs. [September, 1932.]
- b. VERMA, S. C. & AGARWALA, M. P.—“ A new species of *Spinitectus*, a nematode, from India.” *XXXIV* (3), 263-268, 4 figs., 9 refs. [September, 1932.]

(a) Maplestone records the following new nematodes parasitic in animals at the Calcutta zoo. *Phyocephalooides primus* n. g., n. sp., in *Hylobates hoolock*; *Belanisakis ibidis* n. g., n. sp. in *Ibis melanocephalus*; *Quasithelazia tenuis* n. g., n. sp. in *Ceryle smyrnensis* (single male specimen); *Quasistrongylus rheae* n. g., n. sp. in *Rhea americana*; *Habronema diesingi* n. sp. in *Acryllium vulturinum*; *H. magnilabiata* n. sp. in *Polioaetus plumbeus*; *H. asymmetrica* n. sp. in *Circus micrurus*; *H. casuarii* n. sp. in *Casuarius bicarunculatus*; *Acuaria indica* n. sp. in *Astur badius*; *A. brevispicula* n. sp. in *Copsychus saularies*; *Kalicephalus parvus* n. sp. in *Naia tripudians*; *Oesophagostomoides traguli* n. sp. in *Tragulus javanicus*; *Oesophagostomum tridentatum* n. sp. in *Semnopithecus obscurus*; and *Ornithostrongylus travassosi* n. sp. in *Chalcophaps indica*. These forms are fully described and illustrated. In addition, males are described for the first time for *Habronema euplocami* Maplestone, 1930, and *Kalicephalus brachycephalus* Maplestone, 1931.

B.G.P.

(b) Verma and Agarwala have described and figured *Spinitectus indicus* n. sp. from the silurid fish *Pseudotropius garua* and *Eutropiichthys vacha*, obtained from the Allahabad fish market. This species differs from the 8 existing species in the median position of the vulva, the long undifferentiated oesophagus, and the form and arrangement of the spinous rings, papillae, and spicules.

B.G.P.

403—Report (18th) of the Director of Veterinary Services and Animal Industry. Onderstepoort.

- a. MÖNNIG, H. O.—“ Wild antelopes as carriers of nematode parasites of domestic ruminants, Pt. II.” Part I, pp. 153-172, 27 figs., 12 refs. [August, 1932.]
- b. MÖNNIG, H. O.—“ *Syngamus indicus* : A new nematode from the Indian elephant.” Part I, pp. 173-175, 4 figs., 1 ref. [August, 1932.]
- c. ORTLEPP, R. J.—“ On a new species of *Tetrameres* (*Tetrameres paradisei* sp. nov.) from Stanley Cranes.” Part I, pp. 177-182, 8 figs., 10 refs. [August, 1932.]
- d. ORTLEPP, R. J.—“ Some helminths from South African Chiroptera.” Part I, pp. 183-196, 17 figs., 12 refs. [August, 1932.]

(a) Mönnig has made a further study of the parasites of wild antelopes and has attempted the experimental transmission of these worms to sheep and vice versa. Six new species are described as well as one new genus.

The new genus is *Bronchonema* (Metastrongylidae), with *B. magna* n. sp. as type, from *Damaliscus albifrons*; the five other new species are:—*Trichostongylus minor* from *Damaliscus albifrons*; *Cooperia hungi* and *Ostertagia hamata* from *Antidorcas marsupialis* and *Ovis aries*; *Skrjabinema alata* from *Ovis aries* and *Skrjabinema africana* from *Raphiceros campestris*. The

author has divided the genus *Skrjabinema* into the sub-genera, *Skrjabinema* and *Chilocrypta*. The morphology and bionomics of the free-living stages of *B. magna* are also dealt with. D.O.M.

(b) Mönnig describes a new species, *Syngamus indicus* which was found, at autopsy, in the lower portion of the pharynx of an Indian elephant. The parasite is more closely related to *S. hippopotami* than to any of the other members of the genus but differs from this species in the character of the bursa as well as in several measurements. D.O.M.

(c) Ortlepp describes a new nematode species, *Tetrameres paradisea*, a parasite occurring in the proventriculus of *Tetrapteryx paradisea*. The affinities of the new species are also considered. D.O.M.

(d) Ortlepp found four new species of nematodes from various hosts belonging to the Chiroptera.

The new species are *Anoplostrongylus alatus* from *Miniopterus natalensis*; *Strongylacantha pretoriensis* and *Physaloptera bedfordi* from *Rhinolophus zuluensis*; and *Litomosa chiropterorum* from *Miniopterus natalensis* and *Eptesicus capensis*. Additions are also made to Mönnig's description of *Anoplostrongylus ornatus*. D.O.M.

404—Report. M.B.A.C.

a. HOEPLI, R.—“Parasitic and free-living nematodes found on the Island of Amoy.” 1st annual report, pp. 57-63. [1932.]

(a) Hoepli lists thirty-one parasitic and seven free-living species of nematodes from the locality of Amoy.

Of the parasitic species, sixteen are new to science, and of these seven have already been described in separate publications and the remaining nine have yet to be described in detail. In the present publication the host and location with the reported hosts and distribution outside China are given where these are known. The free-living forms include one new species, *Prismatolaimus hsuei*, and two new varieties. M.J.T.

405—Reunión (Séptima) de la Sociedad Argentina de Patología Regional del Norte.

a. UDAONDO, C. B. & MAISSA, P. A.—“La hepato-lienografía por las sales de torio.” I, pp. 85-91, 5 figs. [1932.]

b. PONDAL, M. R. L.—“Constitución y modalidades patológicas de la infancia en Tucumán.” I, pp. 128-138. [1932.]

c. MAZZA, S., ROMAÑA, C. & FIORA, A.—“Algunos hemoparásitos de mamíferos del norte.” II, pp. 990-997, 7 figs. [1932.]

d. MAZZA, S. & FIORA, A.—“Nuevos hemoproteus y microfilarias de aves de Jujuy.” II, pp. 998-1001, 2 pls. [1932.]

e. MAZZA, S., ESTEULLET, A. & DEAUTIER, E.—“Hemoparásitos de un grupo de aves de Escobar y Sierra de la Ventana (Pcia. de Buenos Aires) y de la ciudad de Buenos Aires.” II, pp. 1002-1004, 1 pl. [1932.]

f. MAZZA, S., OLIVA, C. D., SCHÜRMANN, K. & GUTDEUTSCH, H.—“Parásitos de la sangre de algunas aves de la zona del Chaco.” II, pp. 1005-1007, 1 pl. [1932.]

g. ROMAÑA, C.—“Hemoparásitos hallados en el sur del Chaco en monos ‘carayá’ (*Alouatta caraya* Humb.).” II, pp. 1008-1012, 3 figs. [1932.]

h. KHALIL, M. & VOGELSANG, E. G.—“ On a new genus of nematodes *Mazzia* *Mazzia* n. g., n. sp. from an Argentine edentate.” II, pp. 1016-1019, 2 figs., 4 refs. [1932.]

i. VOGELSANG, E. G.—“ Helmintos del norte argentino.” II, pp. 1020-1021. [1932.]

j. VOGELSANG, E. G.—“ Nuevos huéspedes para *Ancylostomidae* (Loos, 1905) Lane 1917.” II, pp. 1022-1023. [1932.]

k. MAZZA, S. & ROMAÑA, C.—“ Comprobación de *Dirofilaria immitis* Leidy, 1859 y *Dirofilaria repens*, Railliet y Henry, 1911 en perros del Chaco santafesino.” II, pp. 1024-1031. [1932.]

l. MAZZA, S. & ROMAÑA, C.—“ Comprobación de *Setaria equina* Abildgaard, 1789 en caballos del Chaco santafesino.” II, pp. 1032-1035, 1 pl. [1932.]

m. ROMAÑA, C.—“ Hallazgo de filarias en el cardenal común (*Paroaria cristata*).” II, pp. 1036-1037, 1 pl. [1932.]

n. MAZZA, S. & FIORA, A.—“ Filarideo n. sp. del peritoneo de perdiz *Nothura maculosa* (Temm.) Jujuy.” II, pp. 1038-1039, 1 pl. [1932.]

o. MAZZA, S. & FIORA, A.—“ Filarideo n. sp. del vizcachón de la sierra (*Lagidium tucumanus* Thos.) de la provincia de Jujuy.” II, pp. 1040-1041, 1 pl. [1932.]

p. MAZZA, S. & SANTILLAN, P.—“ Comprobación de *Spirocera sanguinolenta* (Rudolphi, 1819) en perros de Tucumán y por primera vez en caninos del país.” II, pp. 1042-1045, 1 pl. [1932.]

q. MAZZA, S., PARODI, S. & FIORA, A.—“ Cestode anaplocefálico n. sp. de vizcacha de la sierra (*Lagidium tucumanus* Thos.) de la provincia de Jujuy.” II, pp. 1046-1054, 11 figs. [1932.]

(a) Udaondo and Maissa describe their employment of a thorium dioxide sol injected intravenously for the clearer radiological delineation of liver and spleen (the colloid is deposited in the Kupfer cells). Two of the skiagrams illustrating this technique show calcified hydatid cysts, in liver and spleen respectively. B.G.P.

(b) Pondal, in the course of a paper on the constitution and pathology of children in Tucumán, states (p. 135) that of 200, mostly young, children examined, 21 had simple and 12 compound infections with the following parasites: ascaris (24 cases), trichuris (8), taenias (2), oxyuris (4), protozoa (5). B.G.P.

(c) Mazza, Romaña and Fiora describe a new microfilaria from the blood of *Tagassus albirostris*, *Mf. uncinicaudata* [referred to, under a preceding illustration, as *uncicaudata*.]; another from *Oncifelis salinarum*, *Mf. formosense* n. sp.; *Acantocheylonema* [sic] *tatusi* adults and microfilariae in various armadillos; and a new trypanosome. B.G.P.

(d) Mazza and Fiora have again encountered *Microfilaria parodii* in *Cyanocorax chrysops*, previously found by Mazza in the same bird in 1928. In addition they describe *Mf. chrysopsis* n. sp. also in *Cyanocorax chrysops*, *Mf. quitupi* n. sp. in *Pitangus sulphuratus bolitianus*, and *Mf. bonariensis* n. sp. in *Molothrus bonariensis*. All these birds were met with in Jujuy. B.G.P.

(e) Mazza, Esteullet and Deautier here record two new microfilariae from birds; *Mf. platensis* n. sp. from *Embernagra platensis*, Escobar, and *Mf. dabbenei* n. sp. from *Gubernatrix cristata*, Buenos Aires. B.G.P.

(f) Among the blood-parasites of birds from the Chaco region Mazza and his co-workers describe *Microfilaria talicei* n. sp.; from *Paroaria cristata* and *Mf. lilloi* n. sp. from *Thectocercus acuticaudatus*. B.G.P.

(g) Romaña describes *Microfilaria Parnai* n. sp., together with a new trypanosome, in *Alouatta caraya* from Chaco. B.G.P.

(h) Khalil and Vogelsang describe, from the stomach of *Chaetophractus vellerosus* in the Argentine, a new spirurid *Mazzia mazzia* n. g., n. sp., which they assign to the Schistorophinae, Ancyacanthidae. B.G.P.

(i) Vogelsang lists 11 species of nematodes, 1 of acanthocephala and an unrecognizable cestode collected from 40 carnivores, marsupials, edentates and reptiles in northern Argentine by Prof. Mazza. B.G.P.

(j) Vogelsang records the following new hosts for ancylostomes in northern Argentine: *Ancylostoma caninum* in *Dasyurus villosus* and *Necator americanus* in *Tolypeutes matacos*. In the Zoo Park at Hagenbeck he has found *A. caninum* in *Felis pardalis* and *N. americanus* in *Mandrillus maimon*. B.G.P.

(k) Mazza and Romaña have found, for the first time in the Argentine, *Dirofilaria immitis* in the heart of a dog born and bred locally. *Dirofilaria repens* was found, for the first time in South America, in the subcutaneous tissues of this and of another dog. In both cases diagnosis was originally made from microfilariae. B.G.P.

(l) Mazza and Romaña record *Setaria equina* from the peritoneum of a native-bred horse. B.G.P.

(m) Romaña briefly describes the adult female and microfilaria of *Filaria Mazzai* n. sp. from the cardinal, *Paroaria cristata*. He found 4 females in the peritoneum. B.G.P.

(n) Mazza and Fiora describe *Filaria Hoffmanni* n. sp. from *Nothura maculosa*, the "partridge" of Jujuy. Although males and females were found in the peritoneum, no microfilariae were seen in the blood. B.G.P.

(o) From the peritoneum of *Lagidium tucumanus* in Jujuy, Mazza and Fiora have recovered *Acanthocheilonema Finlayi* n. sp. Its microfilariae are sheathed. B.G.P.

(p) Mazza and Santillan record *Spirocerca sanguinolenta* from oesophageal tumours in native dogs of Tucumán. The males had 5 pairs of preanal papillae, not 4, and the unpaired papilla was not seen. B.G.P.

(q) Mazza, Parodi and Fiora have figured and described *Bertiella Finlayi* n. sp. from the viscacia *Lagidium tucumanus*. It differs from *B. forcipata* Linstow, 1904, from *Lagidium peruanum*, in the shape of the eggs, the irregular sequence of genital pores, and the rounded suckers. B.G.P.

406—Revista de Sanidad e Hygiene Publica.

- a. BUEN, E. de, CÁMARA, P. de la, & JUÁREZ, E.—"Estudio de un foco de anquilostomiasis en un tejar del término municipal de Oropesa (Toledo)." VII (11), [Reprint 22 pp.], 2 figs., 32 refs. [November, 1932.]
- b. CÁMARA, P. de la, & CAMPS, L. A.—"Una encuesta epidemiológica sobre anquilostomiasis en tejares de las provincias de Cáceres y Toledo." VII (12), [Reprint 10 pp.], 2 tables, 9 refs. [December, 1932.]

(a) De Buen, de la Cámara and Juárez give a clinical and epidemiological study of a small focus of ancylostomiasis in a tile-works in Oropesa (Toledo). Of 6 infected persons only one showed marked symptoms.

B.G.P.

(b) Consequent upon the discovery of a focus of ancylostomiasis in Oropesa [see previous abstract], de la Cámara and Camps have sought for further foci in the provinces of Cáceres and Toledo, with negative results. Of 112 faecal examinations, 6 revealed Ascaris, 2 Trichuris, and 4 *Hymenolepis*.

B.G.P.

407—Revue Vétérinaire et Journal de Médecine Vétérinaire et de Zootechnie.

a. CAMBAU.—“Anémie vermineuse mortelle causée par des strongyles et des cylicostomes.” **LXXXIV**, pp. 65-69. [February, 1932.]

(a) Cambau records a fatal case of strongylosis in an army horse which had been treated with terebenthine and chloroform, and with thymol, *per os*, and with intravenous injections of both terebenthine and arsenobenzol. At the autopsy, which took place soon after death, numerous strongyles and cylicostomes were found, still living, in the colon and caecum.

B.G.P.

408—Rivista di Patologia Nervosa e Mentale.

a. RIZZO, C.—“Considerazioni su tre casi di cisticercosi cerebrale diagnosticati in vita. La sindrome demenziale nella cisticercosi cerebrale.” **XXXIX**, pp. 503-520, 11 figs. [1932.]

(a) Rizzo describes the pathological anatomy of a case of cerebral cysticerciasis, and discusses the clinical and biological diagnosis of such cases, and the symptomatology of the disease. This case is the last of 3 which were diagnosed during life by the author, largely on the finding of an eosinophilia in the cerebro-spinal fluid accompanied by a negative Wassermann reaction: apparently none of the cases harboured the adult *Taenia solium*, and the infections were confined to the central nervous system.

B.G.P.

409—Scottish Naturalist.

a. ROBERTSON, D.—“Wood-pigeon infested with cestodes.” **No. 194**, p. 52. [1932.]

(a) Enteritis, inflammation of the intestinal wall and blood effusion were found by Robertson associated with a heavy intestinal infection of the cestode *Skrjabinia columbae* in a wood-pigeon shot in Kincardineshire, Scotland.

R.T.L.

410—Tierärztliche Rundschau.

a. MIDDELDORF, R.—“Wirkung, Verträglichkeit und Dosierung der Panserapiskapsel als Wurmmittel bei Pferden.” **XXXVIII** (46), 802-803. [13th November, 1932.]

(a) Middeldorf has successfully used Panserapis capsules, a drug containing hexachlorethane much used against liver-fluke, for parasitic colitis in horses. Fasting since the previous noon, the horses are given 3-5 capsules, according to age, on two successive mornings, the treatment being repeated in 10 days. The drug is very effective against strongyles, ascarids and gastrid larvae and is free from toxic after-effects.

B.G.P.

411—Tijdschrift voor Diergeneskunde.

a. SCHUYTEMAKER, K.—“Iets over distomatose bij het schaap.” LIX (3), 171-173. [1st February, 1932.]
 b. OIJEN, C. F. van.—“Trichinellosis in Nederland.” LIX (4), 371-372. [15th February, 1932.]

(a) Schuytemaker recommends the dosing of sheep with carbon tetrachloride and olive oil, in October and January, to treat the very acute form of distomiasis met with in Holland. B.G.P.

(b) Oijen takes exception to the views recently put forward by Swellengrebel in the *Nederlandsch Tijdschrift voor Geneeskunde* [See Abstract No. 71a], that trichina-inspection is too costly a routine to be applied in Holland. He quotes the case of an outbreak of trichinellosis at Zandvoort where inspection led to the discovery of pig-sties near a refuse-dump overrun with trichinous rats. He complains that Prof. Swellengrebel, as a biologist, has only theoretical knowledge of real trichinella campaigns. B.G.P.

412—Transactions of the Far Eastern Association of Tropical Medicine.

a. HOEPPLI, R.—“Tissue reactions due to parasites.” (8th Congress, 1930.) pp. 173-183, 2 pls., 19 refs. [March, 1932.]

(a) Hoeppli briefly reviews the principal factors in the relations between parasite and host such as species and age of host and type of tissue, and gives an account of the histopathological changes associated with helminth infection. He merely touches upon the problem of the relation of helminth parasites to tumour growth. R.T.L.

413—Transactions of the Kansas Academy of Science.

a. DOBROVOLNY, C. G.—“Canine filariasis and its transmission.” XXXV, pp. 65-66. [1932.]

(a) About 12 cc. of blood, of a dog with 50-70 microfilariae per cc. falling to 1-5 per cc., was injected at intervals of a week into an experimental dog; 10 days after the first injection one microfilaria was recovered—and the dog died. R.T.L.

414—Transactions of the Royal Society of Tropical Medicine and Hygiene.

a. GOHAR, N.—“*Streptopharagus sudanensis* Baylis, 1923. Description of the male.” XXVI (3), 295-296, 2 refs. [November, 1932.]

(a) The original description of the species *Streptopharagus sudanensis* from *Gerbillus gerbillus* by Baylis was based on female specimens. Gohar contributes here an account and drawing of the male which approaches *S. numidicus* Seurat 1917. R.T.L.

415—Verhandlungen der Schweizerischen Naturforschenden Gesellschaft.

a. DUBOIS, G.—“À propos d'un nouveau genre de trématode.” *CXIII*, pp. 385-386. [1932.]

b. BAER, J. G.—“À propos du curieux mode de fixation d'un nouveau genre d'Helminthes (Trematodes).” *CXIII*, pp. 386-387. [1932.]

(a) *Hemistomum glossoides* Dubois 1927 is made type of a new genus *Glossodiplostomum* with two characteristic features, viz., body not divided into two distinct regions, and presence of cephalic glands discharging in the lateral pseudo-suckers on either side of the oral sucker. R.T.L.

(b) Baer has described from the cormorant a new genus *Harvardia*, with *H. sandgroundi* n. sp. as type, belonging to the subfamily Polycotylinae. He confirms La Rue's hypothesis that the two muscular auricles or appendages fix the worm to its host by means of the secretion of cells in the anterior half of the worm. R.T.L.

416—Veterinary Alumni Quarterly.

a. SCHWARTZ, B.—“Control measures for parasites of sheep and swine.” *xx* (2), 65-70. [September, 1932.]

(a) Schwartz discusses in general terms the importance of helminths to sheep and pigs.

In discussing control he stresses the importance of slight initial infections and in the case of *Haemonchus* he advocates treatment and rotation of pastures and of stock as a practical method which may be extended to the other intestinal nematodes of sheep. He considers tetrachlorethylene as the most promising drug to use. In pigs, ascarids, kidney-worms and lung worms are the most pathogenic, and control measures for each are discussed. T.W.M.C.

417—Veterinary Bulletin. Washington.

a. INGRAM, L. W.—“Animal carriers of human infection.” *xxvi* (4), 287-298. [1932.]

(a) In the course of a general account of diseases communicable from animals [vertebrates] to man, or *vice versa*, Ingram mentions very briefly some of the common human helminths. B.G.P.

418—Veterinary Journal.

a. BLOUNT, W. P.—“Studies of fowl paralysis. III. Gastronomic enteritis.” *LXXXVIII*, pp. 236-240. [1932.]

(a) Blount has noticed that in a large number of cases of fowl paralysis there was constantly found an inflammation of the intestines accompanied by abnormally heavy parasitosis. He suggests that the gizzard may cease to function properly in the absence of adequate insoluble grit. This leads to indigestion and inflammation after which enteritis of the duodenum and the intestine follow and pave the way for the development of parasites, particularly *Daravinea*, heterakids, ascarids and *Eimeria*. Such infested birds are more liable to become attacked by fowl paralysis. P.A.C.

419—Veterinary Record.

a. BAYON, H. P.—“The pathogenesis of *Neurolymphomatosis gallinarum* and similar forms of ‘fowl paralysis’.” XII (17), 457-467. [23rd April, 1932.]

(a) Bayon has evidence that cestode parasites may be the inciting cause of neurolymphomatosis in chickens.

Eight chickens which died of this disease had heavy infestations with *Daravinea proglottina* and showed all the early stages of neurolymphomatosis, infiltration of the peripheral nerves with lymphoidal cells causing paralysis, and discrete accumulations of such cells in the villi of the duodenum and the liver, together with degeneration in the pancreas. Bayon points out, however, that the presence of the tapeworms and, in other cases, of coccidia, can only be a predisposing factor in the aetiology of the disease as it has often been found in birds which contained no internal parasites.

P.A.C.

420—Vida Nueva.

a. KOURI, P. & ARENAS, R.—“*Praticolella griseola*, Pfeiffer. Probable huesped intermedio de la *Fasciola hepatica*, L., en Cuba.” XXX (5), 329-346. [15th November, 1932.]

(a) In 20 per cent. of a batch of 200 specimens of *Praticolella griseola*, a species which occurs in Cuba but has been introduced from Florida, rediae and cercariae occurred which resemble those of *Fasciola hepatica*. Experimental proof of their identity is not yet forthcoming.

R.T.L.

421—Videnskabelige Meddelelser fra den Naturhistoriske For- ening i Kjøbenhavn.

a. KREIS, H. A.—“Freilebende marine Nematoden von den Sunda-Inseln. II. Oncholaiminae.” [Papers from Dr. Th. Mortensen’s Pacific Expedition 1914-16. LXI.] XCIII, pp. 23-69, 28 refs. [1932.]

(a) In the collection of 899 marine nematodes made by Dr. Th. Mortensen’s Pacific Expedition, Kreis has found seventeen genera of which 8 are apparently new, viz., *Pseudopelagonema* containing *Pelegans* t. sp., n. sp., *P. filiformis*; *Pelagonemella*, with *P. javaensis* t. sp., n. sp.; *Doryonchus* with *D. typicus* t. sp., n. sp.; *Dioncholaimus* with *D. brevicavatus* t. sp., n. sp.; *Pseudoparacroncholaimus*, with *P. filicaudatus* (Ditlevsen 1926) type and *P. ditlevenseni* n. sp., and *P. longissime-caudatus* n. sp.; *Meroviscosia* with *M. longicaudata* t. sp., n. sp.; *Pseudorhyncholaimus* with *P. elegans* t. sp., n. sp., and *Cacolaimus* with *C. papillatus* t. sp., n. sp. *Viscosia meridionalis* formed 39.5 per cent. of all the specimens collected. A large number of new species of known genera are also described.

R.T.L.

422—Virchow’s Archiv für Pathologische Anatomie und Physiologie.

a. ANTONOW, A.—“Über die Art der Kapselbildung bei Hirncysticercose.” CCLXXXV, pp. 485-493, 3 figs. [1932.]

b. LUBINSKY, G.—“Zur pathologischen Anatomie der epithelialen Entzündung (‘Dermomyositis’) bei der Schweineascaride (*Ascaris suum* Goeze).” CCLXXXV, pp. 691-703. [1932.]

c. HEILMANN, P.—“Beitrag zur Pathologie der Hirncysticercose.” CCLXXXVI, pp. 176-182. [1932.]

(a) After a brief historical introduction Antonow discusses in detail the formation of the adventitious capsule in cerebral cysticercosis.

Young cysticerci, living at the time of the hosts' death, are enclosed in a thin capsule composed of an outer layer of granulation tissue containing giant cells. Around older cysticerci which have died the capsule is thick and has in addition an inner connective-tissue layer, giant cells being here and not in the granulation layer. As a final stage there is a single thick layer of hyaline connective tissue. Rejecting the formation of the capsule from nerve tissue, or from the walls of blood vessels except occasionally, the author suggests its possible elaboration from plasma cells transformed into fibroblasts. B.G.P.

(b) Although diseases of nematodes have been known since 1862 Zoologists have failed to note their pathological anatomy. Lübinsky has observed the dermomyositis, described by Weinberg & Keilin in 1912, in many species of nematodes especially in the *Ascaris* of the pig. The microscopical appearances of normal cuticle, and of the pathological changes in dermomyositis are described in detail. R.T.L.

(c) Heilmann discusses the pathology of human cerebral cysticercosis. The location of the parasites may be very variable; the author cites cases of cysticerci free in the ventricles, or blocking Magendie's foramen or the Sylvian aqueduct. In one case, described at length, Monro's foramen was occluded. The parasite itself may take the ordinary vesicular form or it may be lobed (*C. lobatus*); occasionally daughter cysts may be produced as in hydatid (*C. racemosus*). The local host-reactions and the migration and death of the parasites are also discussed. B.G.P.

423—West African Medical Journal.

a. RAMSAY, G. W. St. C.—“Routine examination of the urine in areas in which *S. haematobium* is endemic: a consideration of the significance of certain abnormal constituents.” VI (1), 3-4. [July, 1932.]

(a) From an analysis of over 2,000 urines from an area in Northern Nigeria where urinary schistosomiasis is highly endemic, Ramsay found that there is a close association between the presence of white cells, red cells and albumen and the presence of bilharzia eggs. Owing to the prevalence of gonorrhoea the red cells form a more reliable criterion of bilharzia infection than the white cells. R.T.L.

424—Zeitschrift für die Gesamte Experimentelle Medizin.

a. ROSEGGER, H.—“Chemotaxisversuche mit Wurmsubstanz an eosinophilen Leukocyten.” LXXXV, pp. 712-722, 14 figs., 3 tables, 18 refs. [1932.]

(a) Rosegger here explains the phenomenon of eosinophilia in helminthiasis as due to the chemotactic effect of a specific substance in the body of the worm; in support he describes experiments *in vitro* using *Ascaris lumbricoides* tissues and horse blood, in which the eosinophiles are clearly visible without staining.

A minute spot of worm substance was fixed on a slide and the behaviour of individual eosinophiles in that region was noted. In some cases the cells approached the spot ; in others they moved away, but only to a certain distance. In another series of experiments the worm substance was contained at definite concentrations, in capillary tubes which were then brought into contact with blood. Migration towards the worm substance took place at concentrations of 1 : 100 and 1 : 1,000 but away from it at 1 : 10. Presumably, as is usual in chemotactic phenomena, there is an optimum concentration of the stimulus, and above this the chemotaxis becomes negative. This would explain the common histological picture of local eosinophilia ; the aggregation of eosinophiles in a limited zone of granulation tissue, surrounding the worm but some distance from it.

B.G.P.

425—Zeitschrift für die Gesamte Neurologie und Psychiatrie.

a. DUNABURG, A.—“Zur pathologischen Anatomie des Hirncysticercus (multiple Cysten).” *CXLII*, pp. 120-128, 2 figs. [1932.]

(a) Dünaburg describes at length a human case of cerebral cysticercosis cellulosae in which the cysticercus was of the racemoscerebral type with very large acephalous cysts. The cysts occurred in the white matter as well as in the cortex. The histological picture is described.

B.G.P.

426—Zeitschrift für Urologie.

a. MAJANZ, A. I.—“Der erste Fall von Bilharziosis in USSR.” *XXVI* (10), 665-673. [1932.]

(a) Bilharziosis is not endemic in Soviet Russia. The case described by Majanz in Moscow had come from Africa.

R.T.L.

427—Zeitschrift für Wissenschaftliche Zoologie.

a. KILIAN, R.—“Zur Morphologie und Systematik der Gigantorthynchidae (Acanthoceph.).” *CXL* (2), 246-345, 45 figs., 10 tables, 74 refs. [1932.]

(a) As the result of a detailed study of numerous specimens of *Hamanniella microcephala* (Acanthocephala), Kilian concludes that this species is in all fundamental respects closely similar to *Macracanthorhynchus hirudinaceus* ; they differ only in various size-relationships. The author has also greatly extended Hamann's description of *Gigantorthynchus echinodiscus*.

B.G.P.

428—Zoologica. New York.

a. MCCLURE, G. W.—“Nematode parasites of mammals, with a description of a new species *Wellcomia branickii*.” *XV* (1), 1-28, 1 fig., 40 refs. [March, 1932.]

(a) Synoptic lists are given of the nematodes, and their hosts, collected over a period of two years in the New York Zoological Park. One new form *Wellcomia branickii* n. sp. from the rat *Dinomys branickii* is described. It differs from *W. evoluta* in the peculiar arrangement of six head papillae, three inconspicuous lips and the spicule which is 335 μ long.

R.T.L.

429—Zoologische Jahrbücher. Abteilung für Systematik, Ökologie und Geographie der Tiere.

a. SCHULZ, E.—“Beiträge zur Kenntnis mariner Nematoden aus der Kieler Bucht.” LXII (4), 331-430, 51 figs., 90 refs. [1932.]
 b. ALLGÉN, C.—“Die Desmodoren (*Desmodora* de Man), ein bemerkenswertes marines Genus der Nematodenfamilie Chromadoridae.” LXII (4), 431-468, 28 figs., 21 refs. [1932.]

(a) Schulz has given an extensive account of the free-living marine nematodes of Kiel Bay. His list of 55 species contains one new variety, 43 new species, and the following 5 new genera; *Polydontus*, *Parasymploctostoma*, *Paracothonolaimus*, *Paradesmolaimus* and *Eumorpholaimus*. B.G.P.

(b) Allgén here monographs the free living marine genus *Desmodora* de Man, describing the genus as a whole and then each species in considerable detail. The following 4 new species are included; *D. campbelli*, *D. similis*, *D. tenuicauda* and *D. norwegica*. B.G.P.

430—Zoologischer Anzeiger.

a. SCHULZ, R. E. & KREP KOGORSKAJA, T. A.—“*Dentostomella translucida* n. gen., n. sp. (Nematoda Oxyurinae), aus einem Nagetier (*Rhombomys opimus* Licht.)” XCVII (11/12), 330-334, 7 figs. [15th February, 1932.]
 b. ALLGÉN, C.—“Über eine Art des Genus *Paroncholaimus* Filipjev., *P. donsi*, von der Insel Röst (Lofoten-Archipel).” XCVII (11/12), 334-336. [15th February, 1932.]
 c. SCHUURMANS STEKHoven, jr. J. H. & CONINCK, L. de.—“Zur Synonymie von *Ascolaimus elongatus* (Bütschli 1874).” XCIX (5/6), 149-163. [1st July, 1932.]
 d. KRULL, W. H.—“Studies on the life history of *Pneumobites longiplexus* (Stafford).” XCIX (9/10), 231-239, 2 figs., 12 refs. [1st August, 1932.]
 e. KRUMBIEGEL, I.—“Über die Bedeutung und Einteilung thigmotaktischer Erscheinungen im Tierreich.” C (9/10), 237-250, 6 figs., 11 refs. [1st November, 1932.]

(a) In the large intestine of *Rhombomys opimus* (Muridae) in Kasakstan, Central Asia, Schulz and Krepkogorskaja found a nematode, *Dentostomella translucida* n. g., n. sp. It belongs to the Oxyurinae but is not differentiated from known genera. R.T.L.

(b) Allgén describes *Paroncholaimus donsi* n. sp., a marine free-living nematode collected in the region of the Lofoden Islands (Norway). It differs from other species of the genus in the arrangement of the cephalic bristles and the structure of the pharynx. B.G.P.

(c) The synonymy of the marine free-living nematode *Ascolaimus elongatus* (Bütschli, 1874) is discussed by Schuurmans Stekhoven and de Coninck, who regard the following names as synonyms: *Ascolaimus filiformis* (Ditlevsen, 1919), *A. elongatus* Skwarra, 1921, *Axonolaimus serpentulus* de Man, 1922 [on p. 156 called *Ascolaimus serpentulus* de Man, 1922], *Anticoma longisetosa* Kreis, 1924, *Monohystera elongata* Bütschli, 1874 and *Axonolaimus tenuis* Schulz, 1932. A new description of this species is given and a plea is entered for careful “synthetic” drawings based on numerous observations; the indices in common use are variable since they depend on the total length of the worm. B.G.P.

(d) Krull gives a detailed description of the fully grown metacercariae of *Pneumobites longiplexus* (Stafford), a fluke inhabiting the lungs of the bullfrog, *Rana catesbeiana* Shaw, which were found in a damselfly, *Lestes vigilax* Hagen, the second intermediate host, from the vicinity of Ann Arbor, Michigan.

Out of 89 insects collected, 23 were naturally infected yielding 60 metacercariae some of which were used in experimentally establishing the identity of the fluke by feeding to young bullfrogs which had metamorphosed in the laboratory. A comparison between the metacercariae of *P. longiplexus*, found free mainly in the abdominal cavity and sometimes in the head of the insect, and *P. parvplexus*, *P. medioplexus* and *P. variegatus* is made. In a description of the biology it is shown that the metacercariae are not encysted when fully grown but they may possibly be so during the early part of their development in the insect. The snail or first intermediate host of the fluke has not yet been determined.

J.N.O.

(e) Among vermiciform organisms Krumbiegel differentiates between topothigmotaxis, contact with objects in the environment, and somatothigmotaxis, contact with the bodies of organisms, of the same species (Homoiothigmotaxis) or of closely related species (Heterothigmotaxis) or the contact of an organism with its own body (Idiothigmotaxis) giving rise to coiling and knotting of the body. The author has investigated this latter sub-division, idiothigmotaxis, in gordius worms and nemertineans.

B.G.P.

NON-PERIODICAL LITERATURE.

431—BAYLIS, H. A.—“A list of worms parasitic in Cetacea.” *Discovery Reports*, vi, pp. 393-418, 145 refs. [1932.]

Baylis has compiled a useful catalogue in three sections, viz., list of helminth parasites of the Cetacea with synonymy and hosts; list of hosts with parasites found in each; bibliography arranged under authors. R.T.L.

432—EISMA, M.—“De differentiatie van het derde stadium van de larven der ancylostomidae van mensch hond en kat.” *Haarlem*, 152 pp., 87 figs., 8 pls., 4 pp. refs. [English summary, pp. 146-150.] [1932.]

Eisma describes in detail the morphology of the third stage larvae of *Necator americanus*, *Ancylostoma duodenale*, *A. ceylanicum*, *A. caninum*, and *Uncinaria stenocephala*, together with the biometrical differences between the larvae, and gives a useful table for the quick practical determination of species. The important features to be used for differentiation are the mouth capsule and the cells closing the entrance to the intestine, the transverse striations of the sheath and the relative and actual lengths of the tail.

P.A.C.

433—KOURI, P. & ARENAS, R.—“La distomatosis hepatica en Cuba.” *Habana*, 1, 175 pp., 29 figs., 43 refs. [1932.]

Kouri and Arenas have here reprinted three articles from the periodical “Vida Nueva,” together with some additional notes and abstracts, on the subject of 5 human cases of fascioliasis hepatica in Cuba.

The first article (Vida Nueva, 1931, p. 389) describes the diagnosis of two human cases from eggs in the stool, confirmed in one case by the duodenal sound, and gives full clinical details. A second part treats the disease in general, as met with in animals, its etiology, pathology, symptomatology, diagnosis, prophylaxis and treatment ; and a third part consists of 21 micro-photographs. There are summaries in English and other languages.

The second article (Vida Nueva, 1931, p. 553) serves to amplify the first, and raises the question as to which of the numerous drugs administered to the first case really effected the cure ; it is concluded that emetine hydrochloride was probably responsible.

The third article (Vida Nueva, 1932, p. 231), which appears in full translation in French, claims emetine hydrochloride as a specific against *Fasciola hepatica* and stresses the use of the duodenal sound as a diagnostic technique.

There follow brief notes on three additional cases, a bibliography, and ten abstracts of recent contributions to the subject.

B.G.P.

434—LANE, C.—“ Hookworm Infection.” London, etc., xiv + 319 pp., 36 figs., 19 pp. refs. [1932.]

Clayton Lane has monographed the hookworm infections of man in an illustrated book of some 300 pages containing a selected bibliography.

First the general and differential morphology of adult worms and of larvae are described and the biology of extracorporeal stages is discussed. Next, the infection route and pathology are briefly dealt with. There is a reversion to the old conception of blood loss as an important factor in the aetiology of hookworm anaemia, the evidence for this being based on the experimental observation in dogs of wasteful blood-feeding on the part of hookworms in the intestine.

A detailed discussion is given of techniques for the concentration and counting, respectively, of eggs in faeces. After touching upon clinical symptoms and the but recently explored field of immunity, the author deals *seriatim* with the anthelmintics in modern use, singly or in mixtures, against hookworm. A discussion of the principles underlying prophylactic measures prepares the way for a final chapter on the organization of a hookworm campaign.

Some controversial points are necessarily raised. The author defends the D.C.F. and D.C.F.F. techniques against their critics at some length ; and he dissociates himself from the view that hookworm infections can be ignored merely on the grounds of low intensity.

B.G.P.

435—MAHLAU, E. A.—“ Die Verbreitung der Strongyliden bei Berliner Grossstadtpferden auf Grund der Larvenzüchtung.” Berlin, Inaugural Dissertation, 36 pp., 3 tables, 25 refs. [1932.]

Mahlau has investigated the strongyles of 70 horses owned by the Berlin municipal authority and finds that cultures of faeces contain larvae in the following percentages : *Trichonema* spp., 87.9 ; *Strongylus vulgaris*, 8.41 ; *S. equinus*, 4.48 ; *S. edentatus*, 0.11. Salt flotation revealed eggs in the samples from 64 horses, and 5 of the remaining 6 negatives later produced

larvae. Of the eggs, 74.3 per cent. were in the 16+ stage of segmentation, which suggests that these are *Trichonema* eggs. The larvae were cultured by Nöller's method using detachable glass plates. Ascarids were present in 13 horses.

B.G.P.

436—MEYER, A.—“Dr. H. G. Bronns Klassen und Ordnungen des Tier-Reichs wissenschaftlich dargestellt in Wort und Bild. Acanthocephala. 1. Lieferung. Leipzig, 333 pp., 306 figs. [1932.]

In this fine monograph Meyer proposes a new classification of the Acanthocephala. The 58 genera, of which two, viz., *Acanthocephaloides* and *Travassosia* are new, are grouped into two new Orders. *PALAEACANTHOCEPHALA* Meyer 1931 and *ARCHIACANTHOCEPHALA* Meyer 1931.

PALAEACANTHOCEPHALA contains the 6 families: *Acanthogyridae* Meyer 1931, *Quadrigyridae* Van Cleave 1920, *Rhadinorhynchidae* Travassos 1923, *Polymorphidae* Meyer 1931, *Fessisentidae* Van Cleave 1931 and *Echinorhynchidae* Cobbold 1879. The order *ARCHIACANTHOCEPHALA* contains the 6 families *Neoechinorhynchidae* Van Cleave 1919, *Apororhynchidae* Shipley 1897, *Gigantorhynchidae* Hamann 1892, *Oligocanthorhynchidae* Meyer 1931, *Moniliformidae* Van Cleave 1924 and *Pachysentidae* Meyer 1931. Each of the 58 genera is systematically described. There is a useful check-list of the numerous species which have been placed under the generic name *Echinorhynchus*. The structure development and life cycles of the Acanthocephala are dealt with more briefly. A concluding chapter deals with those forms of medical, veterinary and economic importance.

R.T.L.

437—PETERS, B. G.—“The scope and aims of the Imperial Bureau of Agricultural Parasitology.” St. Albans, Imperial Bureau of Agricultural Parasitology, 6 pp. [1932.]

The Imperial Bureau of Agricultural Parasitology was established in June 1929 as a result of representations made by the Imperial Agricultural Research Conference of 1927. The scope of the Bureau's activities comprises the collection and dissemination of information on such helminthological questions as apply to agriculture in its widest sense, including parasites of both animals and plants. Reservoir and intermediate hosts are also considered so that the literature involved is very extensive. Assistance is offered to individual workers by tracing references and preparing abstracts or translations, and where the results of such work are of general interest, they are printed. In addition, current titles are issued annually and, by arrangement with the Journal of Helminthology, the Bureau's abstracts are being published [in the present periodical]. Identification of material is not directly undertaken, but can usually be secured from other correspondents.

B.G.P.

438—SCHULZE, W.—“Der Nachweis von Lungenwurmlarven in den Darmentleerungen des Schafes und seine praktische Bedeutung.” Leipzig, Inaugural Dissertation, 30 pp. [1932.]

Schulze has examined 214 sheep during the summer (pasture) season for lungworm and its clinical and pathological manifestations.

The sheep, from 4 months to 6 years old and originating from Thuringia and Bavaria, were examined clinically just before slaughter and pathologically at meat inspection; the faeces were examined for larvae by Vajdo's method whereby a faecal pellet is placed in a drop of water, the larvae emerging from the surface. Pathological lesions in the lungs were found 139 times, and larvae in the faeces 55 times. Some lesions are non-helminthic and others were due to a previous and now absent infestation with lungworms. The results show that clinical diagnosis is no index of infestation since in the absence of symptoms larvae and lung lesions may be present; faecal examination is therefore recommended. Disease increases during the summer and autumn, and greater infestations were more frequently found in sheep from high-altitude pastures than in those from low-lying areas.

B.G.P.

439—SPREHN, C. E. W.—“Lehrbuch der Helminthologie.” Berlin, xvi + 998 pp., 374 figs., 1,253 refs. [1932.]

This important contribution to helminthology sets out to deal only with those helminths found in mammals and birds of economic interest in Germany. There is a very complete host list covering 80 pages, and an index of synonyms of species and genera occupying 40 pages, while the recent literature cited runs to 55 pages. The general introduction of 176 pages and the numerous fine new illustrations are its most striking features. The text actually covers a much wider field and attempts to summarise present knowledge of allied forms found in other parts of the world. R.T.L.

440—STAMPA, W.—“Bodenkrankheiten bei Weiderindern und Schafen in der Provinz Pommern unter Berücksichtigung ihrer Abhängigkeit vom Untergrunde.” Berlin, Inaugural Dissertation, 35 pp., 3 tables, 5 maps, 43 refs. [1932.]

Stampa has collected numerous data on the distribution of anthrax, fascioliasis and haematuria in sheep and cattle in Pomerania and has endeavoured to correlate it with the distribution of geological formations. The data are complete only for anthrax. Infections of liver-fluke are heaviest in the Oder valley.

B.G.P.

441—VANDEL, A.—“Le sexe des parasites dépend-il du nombre d'individus renfermés dans le même hôte?” Société Entomologique de France, Livre du Centenaire, pp. 245-252, 19 refs. [1932.]

Vandel discusses the phenomenon of sex determination and shows that, while the sex in the majority of animals is determined at the moment of fertilization, in the case of certain parasites there apparently is a relationship existing between the sex of the organism and the number of individuals within a single host.

So far as Strepsiptera and Monstrillids are concerned the relationship, with little doubt, is determined by a selective action which eliminates one of the sexes. Amongst helminths, however, several cases, observed in nature, in the Mermithidae, viz., *Mermis subnigrescens* parasitic in Orthoptera, *Pseudomermis zytkoffi* in larval Chironomids, *Agameris paradecaudata*

in *Helopeltis theivora*, *Allomermis* sp. in an ant and *Paramermis contorta* in *Chironomus thummi*, demonstrate that the sex of the parasite is directly dependent upon the number of worms present in a single host. This phenomenon has been confirmed by experiment in the case of *Mermis subnigrescens*, a parasite of various Orthoptera. When one host contains 1-3 worms they are all females; if they number from 3 to 23 both sexes are represented; should their number exceed 23 they are all males. J.N.O.

442—VAZ, Z.—“ Contribuição ao conhecimento dos trematoides de peixes fluviais do Brasil.” São Paulo, Thesis, 47 pp., 4 pls., 22 refs. [In Portuguese pp. 1-34; in English (abbreviated translation) pp. 35-45.] [1932.]

(i) In reviewing the trematodes of Brazilian fresh-water fish, Vaz has recorded the following new forms: *Cladocystis intestinalis* n. sp. in *Salminus maxillosus*, *Trematichthys trematichthys* n. g., n. sp. in *Glanidium neivai*, *Witenbergia witenbergi* n. g., n. sp., in *Pseudoplatistoma tigrinum*, *Dadayotrema elongata* n. sp. and *D. minima* n. sp. both in *Myleus* sp., *Travassosinia* n. g. has been erected to receive *Chiorchis dilatatus* Daday, 1907. The relevant literature is reviewed [in the Portuguese section only] and the new forms are illustrated.

B.G.P.

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NOTE.

In all indexes the reference is to the serial numbers and not to the pages. In the Index of Authors, joint authors are separately listed. Thus, "Jones, A. & Brown, B." would appear also as "Brown, B. with Jones, A."

In the Index of Subjects, alphabetization is under the first word (e.g. "Acer sp." before "Acerina sp."). Specific names of helminths are included, where they are mentioned in the abstract, except new species which appear simply as "n. sp." or "n. spp." Under the generic name of a helminth the following order is observed: Papers on the genus as such; papers on undefined species; papers on new species; papers on defined species (not new), e.g.,

Nematodirus monographed.

— n. sp.

— *helveticanus*.

Anthelmintics are listed, without details, under that word, and are indexed separately, with details, under the name of each anthelmintic, as well as under the parasite and (usually) host.

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